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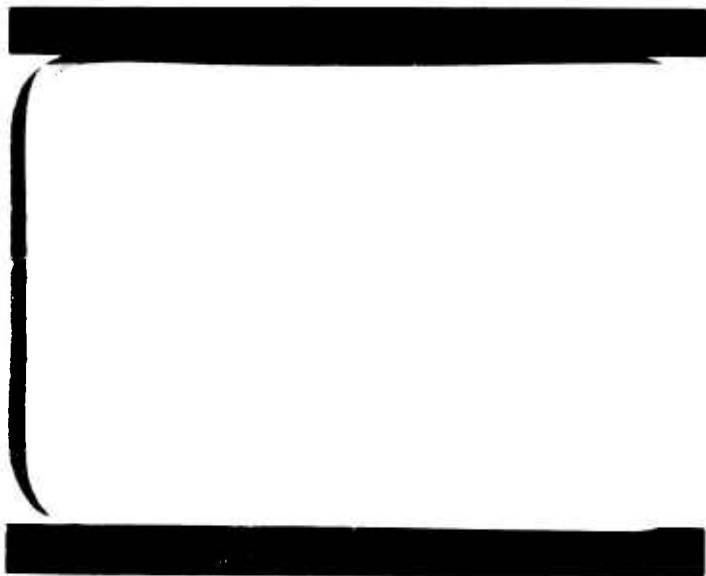
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**GENERAL DYNAMICS
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A2136-1 (REV 6-61)

AD 844034

MERCURY

TEST SUMMARY

FOR

MAJOR CRITICAL COMPONENTS

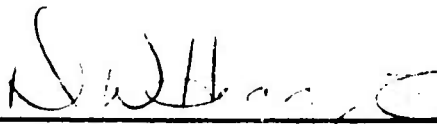
AIRBORNE EQUIPMENT

AE61-0512-10

1 MARCH 1962

GENERAL DYNAMICS/ASTRONAUTICS

PREPARED BY SYSTEMS ENGINEERING



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DEC 3 1962

GENERAL DYNAMICS
ASTRONAUTICS

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REFERENCES

- (a) AFMBO letter MCPTC:JMP:law, PRO 13, dated 29 January 1958, Subject: "Contract AF04(645)-4. Environmental Requirements and Test Procedures for WS 107A-1 Equipments. Convair Specification 7-00210 dated 15 October 1957"
- (b) Convair letter MR:OCP:emp, 531-3015, dated 22 November 1957. Subject: "Contract AF04(645)-4, Environmental Testing of Convair Furnished Equipment"
- (c) Convair Specification 7-00209B, dated 1 March 1958, Addendum I, dated 5 January 1961, "Environmental Design Conditions and Environmental Test Procedures for WS 107A-1 Equipments"
- (d) Convair Specification 7-00210B, dated 1 May 1958, "Environmental Requirements and Test Procedures for WS 107A-1 Equipments"
- (e) Contract AF04(647)-699, CCN 70; Sales Order 89-1-71.
- (f) Contract AF04(647)-635, CCN 85; Sales Order 92-1-79.
- (g) Contract AF04(647)-299, CCN 721; Sales Order 11-1-577.
- (h) AZR-27-001, Test Status Report.

1.0 OBJECTIVE

This report presents the qualification or approval status of major critical components on the Mercury portion of WS107A-1. All components are operating, non-standard, airborne CFE components.

This report is submitted in compliance with:

S.O. 11-1-577, CCN 721 of contract AF04(647)-299

S.O. 92-1-79, CCN 85 of contract AF04(647)-635

S.O. 89-1-71, CCN 70 of contract AF04(647)-699

2.0 SUMMARY

There are 146 major critical components included in this report. One hundred-thirty-seven (137) are subject to qualification testing. The test statuses of components subject to test are:

Qualified by:

| | |
|---|------------|
| PPT | 42 |
| FPT | 7 |
| BOS | 57 |
| Other | |
| SFCW | 1 |
| Evaluation tests (Modified commercial parts) | 7 |
| Similarity to qualified units, plus additional tests | 15 |
| Validation tests | 5 |
| Total | <u>134</u> |

To be Qualified by:

| | |
|---|----------|
| PPT | 1 |
| FPT | 0 |
| BOS | 1 |
| Other | |
| Similarity to qualified units, plus additional tests | 0 |
| Total | <u>2</u> |

Not to be used:

| | |
|---|-----------|
| Rejected for missile use (Design not acceptable) | 1 * |
| Additional testing required | <u>0</u> |
| Total | <u>1</u> |
| | Total 137 |

2.1 No additional types of components were added in this issue.

* Used only on 100D.

3.0 CODING

Column entries in the summary sheets reflect pertinent information as described in paragraph 3.1 through paragraph 3.8.

3.1 PART NUMBER Column

Part numbers, specification numbers, and vendors name are listed in the order indicated in the column heading. If a number is not applicable or a number has not been assigned, dashes will be entered to indicate such omission and maintain descending continuity.

3.2 EFFECTIVITY Column

The effectivity of the listed part is indicated by the manufacturing sequence numbers for Mercury boosters.

3.3 NOMENCLATURE Column

Nomenclature will be that appearing on the contractor's release records or drawings.

A QCDI entry in the lower part of the column indicates the item is listed in the current issue of Departmental Instruction 141-0-92, Quality Assurance Provisions Mercury Pilot Safety Program.

3.4 MAD APPR Columns

Current CCN's do not require these entries and the entries are deleted. Column headings are deleted from the revised form. When significant changes are made on a page, the revised form will be utilized.

3.5 CRIT COMP Column

This entry is replaced by a QCDI entry in the NOMENCLATURE column. (Refer to paragraph 3.3.) The column heading is deleted from the revised form. When significant changes are made on a page, the revised form will be used.

3.6 QUAL BY Column

Entries in the QUAL BY column indicate the method by which the item is qualified. A "PPT" entry indicates that the item was or will be qualified by preproduction tests in accordance with Convair Specification 7-00209B. A "BOS" entry indicates that the item was or will be qualified on the basis of similarity to a previously-qualified item. An "FPT" entry indicates that the item was or will be flight proof tested in accordance with Convair Specification 7-00210B. An "OTH" entry indicates that the item was or will be qualified by means other than those given above.

3.7 TEST SCHED Column

Column entries indicate requirements for test schedules; they do not indicate requirements for testing. "Date" entries in the column indicate time spans for the test schedules. "Completed" entries indicate the test schedules are complete. "Not required" entries indicate schedules are not required; the entries do not indicate tests are not required since qualification may be demonstrated by similarity to previously qualified items or by another manner of qualification.

3.8 REVISION/ADDITION CODING

A horizontal bar inside the lower margin of a page indicates the page is new or revised for the current issue of the report. See example at bottom of this page.

MERCURY

MAJOR CRITICAL COMPONENTS

HYDRAULICS

There are 30 major critical components included in this section. Seventeen units were preproduction tested, one unit is not for missile use, and ten units were approved based on similarity to preproduction tested units and nine of the ten received some additional testing. Two other units will also be approved based on similarity to preproduction tested units, but still require some additional testing.

The 27-08573-1 actuator cylinder manufactured by the Bohanan company will not be used on any missiles because of inherent structural weaknesses. The actuator was included in the basic issue of this report in compliance with references e, f, and g.

The 27-08573-3 and 27-08574-801 vernier servo cylinders, manufactured by Clemco, have successfully passed PET tests and are considered by the Design Group to be satisfactory for flight use.

Relief-valve 27-08569-1, manufactured to original material design requirements of 17-4 Ph poppet and 52100 chrome sleeve, successfully passed PET's. Prior to these tests, this unit was experiencing scoring and unstable operation, however, the problem has apparently been resolved. Similar scoring problems were experienced on the 27-08561-1 relief valve as above; however, it was determined thru tests that chrome plating the poppet will eliminate the scoring problem. This unit has also successfully passed recent PET's.

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|--------------|---------------------------------------|--------------|--|---------------|-----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08550-5 27-08550J 27-04202K Moog Valve M-7773 | 100D Only | Servo Cylinder - Booster Hydraulic | BOS | (12-61) Approved based on similarity to 27-08550-1, which was preproduction tested and reported in Moog Report No. MR-322. The 27-08550-5 was approved on VAF MC 29093 dated 6-26-59. <div>NOTE</div> <div>1. This unit reworked to a 27-87066-1 servo cylinder by service action which replaced the integral filter and servo valve orifice plate.</div> <div>2. This unit is not to be used on Mercury vehicles.</div> | Complete | June 1959 |

| MERCURY TEST SUMMARY | | | | HYDRAULICS | |
|--|---|---------------------------------------|--------------|---|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE |
| | | | | | START |
| 27-08550-7 27-08550K 27-04202K Hydraulic Research Mfg. 104700-1 | 77D 88D 93D 103D 107D 109D 113D 130D 144D 152D 167D | Servo Cylinder - Booster Hydraulic | Oth | <p>(5-61) (10-61)</p> <p>Approved based on similarity to the 27-08550-1, which was preproduction tested, and by additional testing as required. Additional testing is reported in ETL reports, numbers 7A2311 and 7A576.</p> <p>The basic differences between the -7 and the -1 are minor bleed port changes and a rod-end locking device which was functionally evaluated and tested in the -7 cylinder.</p> <p>Specification was revised to K revision. Difference between K revision and the basic specification required additional calibration testing on the transducer which is a sub-component of the cylinder assembly.</p> <p>GD/A design group approved PPT on VAF MC 36974, dated 9-8-59.</p> | Complete Sept. 1959 |
| | | QC DI | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|---|---|--------------|---|---------------|--------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08551-3 27-08551G 27-08503C BenBow-Pantex 8985 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Tank - Hydraulic Fluid, Booster, Type III | PPT | (6-61) Three units S/N 1, S/N 2, and S/N 3 were pre- production tested. Results were reported in Wyle Lab Test Report 5840, Addendums I, II, and III. GD/A design group approved PPT on 27-08551-3 in VAF MC 21925, dated 10-31-58. | Complete | Oct. 1958 |
| | | QC3DI | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|---|--|--------------|--|---------------|---------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08552-5 27-08552H 27-08504C BenBow-Pantex 8983E | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Tank - Hydraulic Fluid, Sustainer, Type II | PPT | (6-61) Two units were preproduction tested to 27-08504C Specification. Results were reported in Wyle Labs Test Report 8188 Addendum I. GD/A design group approved PPT on 27-08552-5 in VAF 45313, dated 3-7-60. | Complete | March 1960 |
| | | QC DI | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | | TEST SCHEDULE | |
|---|---|---------------------------------------|--------------|--|------------|------------|---------------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | START | COMPL | | |
| 27-08553-3 27-08553G 27-08507D Peacock Engineering 51305-3 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Accumulator - Hydraulic, Sustainer | PPT | (5-61) Two units S/N 1X and S/N 2X were preproduction tested by the Wyle Labs. The PPT data and additional test requirements were included in Wyle Lab reports 5845, Addendums I, II, and III. GD/A design group approved PPT in VAFS 45857 and 27813, dated 2-23-60. <u>NOTE</u> Unit is being investigated for possible redesign action to prevent leakage past the piston. | Complete | March 1959 | | |
| | | QCDI | | | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|--|-------------------------------------|--------------|---|---------------|------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08554-3 27-08554F 27-08506D Peacock Engineering 51310-3 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Accumulator - Hydraulic, Booster | PPT | (5-61) (10-61) Two units S/N X1 and S/N X2 were preproduction tested by the Wyle Labs. The PPT data is recorded in report 5844, Addendum II, dated 8-26-58, and report 5844, Addendum III, dated 3-18-59. GD/A design approved PPT in VAF MC 27885, dated 2-24-59. <u>NOTE</u> 1. Unit has an in-service history of precharge gas pressure leakage past the piston and in- to the hydraulic system. 2. Unit is being investigated for possible re- design action to prevent this leakage in future installations. | Complete | March 1959 |
| | | QC DI | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|---|---|--------------|--|---------------|--------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08555-1 27-08555D 27-08511A Peacock Engineering 51285-1 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Coupling Assembly - Staging, Hydraulic Return | PPT | (6-61) Two units S/N 1 and S/N 2 were preproduction tested to 27-08511 Specification. Results were reported in Wyle Test Lab Memo dated 10-15-58, Report 5961 dated 9-26-58 and TR-5841, Addendums I, II, and III. PPT was approved on VAF MC 21559, dated 10-23-58. Specification was revised to A revision. It differs from the basic specification in that the revised specification incorporates maximum weight of the valve and revised procedure for proof cycle test. These revisions were tested in later PET's of this unit. Unit is mounted on the booster section, and used for sustainer hydraulic system. | Complete | Oct. 1958 |
| | | QC DI | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULIC | |
|---|---|---|--------------|--|---------------|--------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08555-3 27-08555D 27-08511C Peacock Engineering 51285-3 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Coupling Assembly - Staging, Hydraulic Return | PPT | <p>(6-61) (10-61)</p> <p>Two units were preproduction tested to 27-08511A specification. Results were reported in Wyle Test Report 5841, Addendums I, II, and III.</p> <p>GD/A design group approved PPT of 27-08555-3 in VAF MC 21560, dated 10-23-58.</p> <p>Specification was revised to B and C revisions. They differ from the A revision in that B and C revisions incorporate maximum weight of the valve and a revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit.</p> <p>Unit is mounted on the sustainer section and is used for the sustainer hydraulic system.</p> | Complete | Nov. 1958 |
| | | QC DI | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | | TEST SCHEDULE |
|---|---|---|--------------|--|------------|--------------|------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | START | COMPL | |
| 27-08556-3 27-08556L 27-08511C Peacock Engineering 51290-3 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Coupling Assembly - Staging, Hydraulic Pressure | PPT | (6-61) Two units S/N 1 and S/N 2 were preproduction tested to 27-08511A specification. Results were reported in Wyle Test Report 5842, Addendums I, II, and III. GD/A design group approved PPT on 27-08556-3 in VAF 21562, dated 10-23-58. Specification was revised to B and C revisions. They differ from the A revision in that B and C incorporate maximum weight of the valve and a revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit. Unit is mounted on the sustainer section and is used for the sustainer hydraulic system. | Complete | Oct. 1958 | |
| | | QC DI | | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|---|---|--------------|---|---------------|------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08556-5 27-08556D 27-08511C Peacock Engineering 51290-5 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Coupling Assembly - Staging, Hydraulic Pressure | Oth | (6-61) (10-61) Approved based on similarity to the -1 and the -3, which were preproduction tested to specification 27-08511A, and by additional tests as required. Results were reported in Wyle lab report 5842. The -5 differs from the -1 in that a check valve was eliminated from the -5 valve to make it compatible with the system. This coupling replaces the 27-08566-1 coupling. GD/A design group approved the 27-08556-5 in VAF MC 43858, dated 3-4-60. Specification was revised to B and C revisions. They differ from the A revision in that B and C incorporate maximum weight of the valve and a revised procedure for proof cycle test. These revisions have been tested in later PET's of this unit. Unit is mounted on the booster section and is used for the sustainer hydraulic system. | Complete | March 1960 |
| | | QCDI | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|--|---|--|--------------|---|---------------|-----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08557-1 27-08557 27-08510C Peacock Engineering 51295-1 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Coupling Assembly - Rise-Off, Hydraulic Return | PPT | (6-61) (10-61) The unit was preproduction tested to revision A of the specification. Results were reported in in TR 5872. GD/A design group approved the unit on VAF 21967, dated 11-1-58. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other (minor) changes not affecting design or test requirements. This unit passed search-for-critical-weakness tests on 4-9-59 and PET's on 5-3-60. Unit is mounted on the launcher and is used for the booster hydraulic system. | Complete | Nov. 1958 |
| | | QC DI | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|--|---|--|--------------|--|---------------|--------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08557-3 27-08557 27-08510C Peacock Engineering 51295-3 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Coupling Assembly - Rise-Off, Hydraulic Return | PPT | (6-61) (10-61) The coupling was preproduction tested to specification 27-08510A and the results were reported in TR 194 on test specimens S/N 002 and S/N 003. GD/A design group approved the testing on VAF MC 35157, dated 7-22-59. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other (minor) changes not affecting design or test requirements. Unit is mounted on the booster and is used for the booster hydraulic section. This unit passed search-for-critical-weakness test on 4-9-59 and PET on 4-13-60. | Complete | Aug. 1959 |
| | | QCDI | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|--|---|--|--------------|--|---------------|--------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08558-1 27-08558 27-08510C Peacock Engineering 51300-1 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Coupling Assembly - Rise-Off, Hydraulic Pressure | PPT | (6-61) (10-61) The unit was preproduction tested to specification 27-08510A and results were reported in test report 5873, Addendum III. GD/A design group approved the unit on VAF's 23795 and 23796, dated 12-10-58. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other (minor) changes not affecting design or test requirements. This unit passed search-for-critical-weakness test on 3-9-61 and PET on 5-3-60. Unit is mounted on the launcher and is used for the booster hydraulic system. | Complete | Dec. 1958 |
| | | QC DI | | | | |

| MERCURY TEST SUMMARY | | | | HYDRAULICS | | TEST SCHEDULE |
|--|---|--|--------------|---|--------------------------|------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | START | |
| 27-08558-3 27-08558 27-08510C Peacock Engineering 51300-3 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Coupling Assembly - Rise-Off, Hydraulic Pressure | PPT | (6-61) The unit was preproduction tested to specification 27-08510A. The data is presented in test report 5873, Addendum III. GD/A design group approved the unit on VAF's 23795 and 23796, dated 12-10-58. Specification was revised to C revision. The C revision differs from the A revision in that the weight of the unit was increased to reflect the actual unit and several other (minor) changes not affecting design or test requirements. This unit passed search-for-critical-weakness tests on 4-9-59 and PET on 10-19-60. Unit is mounted on the booster section and is used for the sustainer hydraulic system. | Complete Dec. 1958 | |
| | | QC DI | | | | 4-13 |

| MERCURY TEST SUMMARY | | | | HYDRAULICS | |
|---|---|---|--------------|--|--------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE |
| | | | | | START COMPL |
| 27-08561-1 27-08561D 27-08501B Vinson A-80282 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Valve - Safety, Hydraulic Relief, Booster | PPT | (10-61) This item was preproduction tested and results were reported in Vinson test report QTR 80282, Addendum I, and Garwood Lab Report 1588. GD/A design group approved the 27-08561-1 valve in VAF 39330, dated 10-21-59. <u>NOTE</u> This unit has recently passed PET's using a chrome plated poppet. | Complete Oct. 1959 |
| | | QC DI | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|---|---|--------------|---|---------------|------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/M | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08563-3 27-08563F 27-08516D Interstate Engineering and Clemco 2425-103 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Cylinder - Hydraulic, Sustainer, Yaw | Other | <p>(6-61) (10-61)</p> <p>The cylinder was approved based on similarity to 7-08286, which was preproduction tested, and by additional tests reported in TR 4547.</p> <p>The 27-08563-3 cylinder differs from the 7-08286 in that the 27-08563-3 cylinder uses hi-temperature O-rings and the diameter of the piston orifice is larger.</p> <p>The 27-08563-3 passed search-for-critical-weakness tests on 12-9-59. PET tests were completed in February 1960 and included temperature, vibration, life, and burst tests to specification 27-08516D requirements.</p> <p>GD/A design group approved the 27-08563-3 specification 27-08516 on VAF MC 23585 dated 12-6-58.</p> <p>The additional tests are the same as those shown under 27-08563-5, except that PET's on the -3 were completed in February 1960.</p> | Complete | March 1959 |
| | | | | | QC DI | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|---|--|--------------|---|---------------|-----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08563-5 27-08563F 27-08516D Interstate Engineering and Clemco 2725-1 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Cylinder - Hydraulic, Sustainer Pitch | Oth | (10-61) The cylinder was approved based on similarity to 7-08286, which was preproduction tested. The test results were reported in Wyle Lab report 4547, Addendum A. Cylinder 27-08563-5 differs from the 7-08286 in that the 27-08563-5 has a larger diameter piston orifice and uses hi-temperature O-rings. The 27-08563-5 passed search-for-critical-weakness tests on 9 December 1959. PET tests were completed in April 1961 and included temperature, vibration, life, and burst tests to specification 27-08516D requirements. GD/A design group approved the 27-08563-5 on VAF 23585 on 12-12-59. | Complete | Dec. 1959 |
| | | QCDI | | | | |

| MERCURY TEST SUMMARY | | | | HYDRAULICS | |
|---|---|--|--------------|---|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE |
| | | | | | START COMPL |
| 27-08564-5 27-08564 27-08512D 64987 Purolator Products | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Filter - Fluid, Pressure, Hydraulic | PPT | (6-61) (10-61) The filter was preproduction tested and the test data presented in test report 2417A. GD/A design group approved the filter tests on VAF MC 52493 and MC 55425, dated 9-12-60. Filter is used as in-line pressure filter for vernier servo cylinders. <u>NOTE</u> The 27-08564-5 filter was tested to C revision of specification; an additional test, bubble point coefficient is being conducted to satisfy the D revision. | Complete Sept. 1960 |
| | | QCPI | | | |

| MERCURY TEST SUMMARY | | | HYDRAULICS | | | |
|--|--|--|--------------|---|-------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VFNDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08564-803 27-08564A 27-08512D Purolator Products 64988-1 | 103D 107D 109D 113D 130D 144D 152D 167D | Filter - Fluid, Hydraulic System, Missileborne | Other | (6-61) (10-61) The filter was approved based on similarity to 27-08564-5 and -801, which were preproduction tested, and by additional tests presented in report 2417. The 27-08564-803 filter differs from the -5 and -801 filters in that the -803 uses a weldable aluminum case to mount the filter instead of the 2024T4 used in the -5 and -801. GD/A design group approved the 27-08564-803, specification 27-08512C, on VAF 27-08564-803 LA 001, dated 5-9-61. Additional tests, bubble point coefficient, are being conducted to satisfy D revision of the specification. Filter is mounted on the sustainer servo cylinder pressure inlet. RAR 92-10-617, dated 7-6-60, references ECP 529 which recommends the replacement of the 27-08564-801 with 27-08564-803 filter, which is made of 6061 aluminum alloy. Effectivity was for all hardware still in existence; therefore it picked up 77D, 88D, 93D, and 100D effectivity for the -803 filter. | Complete May 1961 | |
| | | | | | | QC DI |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|--|---|------------------------------|--------------|---|---------------|----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/ N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08566-1 27-08566B 27-08505B Vickers, Inc. AA-60694-R2A | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Pump - Hydraulic, Booster | BOS | <p>(5-61) (10-61)</p> <p>Approved based on similarity to 7-08207 which was preproduction tested to specification 7-08207D, per Vickers test order 13302, dated 2-8-57 and 13302-1, dated 6-4-57. Similarity was approved in VAF 5435, MC 20198 on 9-20-58, LA-001, 5-25-61.</p> <p>Difference between 7-08207 and 27-08566-1 is an O-ring change for high temperature, and inlet and outlet port changes to agree to D system requirements.</p> <p>Difference between the 7-08207D specification and 27-08505B specification calls for improved quality testing with special emphasis on degree of cleanliness for GD/A requirements.</p> | Complete | May 1961 |
| | | QC DI | | | | |

| MERCURY TEST SUMMARY | | | | HYDRAULICS | | TEST SCHEDULE |
|--|---|------------------------------------|--------------|--|-------------------------|------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | START | |
| 27-08569-1 27-08569C 27-08501B Vinson Manufacturing A-61071 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Valve-Safety, Relief, Hydraulic | PPT | (6-61) (10-61) Two relief valves were preproduction tested. The results were reported Wyle lab report 6608, dated 1-30-59, Vinson report QTR 61071, dated 9-15-60 and Garwood labs 1855, dated 8-8-60. The tests were conducted as required by the unit procurement specification 27-08501. GD/A design group approved the 27-08569-1 valve on VAF LA-001 and LA-002 on 8-30-61/Vinson Manufacturing report QTR 61071, Addendums I, II, and III. | Complete May 1961 | |
| | | | | NOTE 1. PET tests of this unit, manufactured to original material requirements, 17-4 Ph poppet and 52100 chrome sleeve, have been successfully accomplished. | | |
| | | | | QC DI | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|---|--|--------------|--|--------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08573-1 27-08573B 27-08519C Interstate 2792-1 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Cylinder-Actuator, Hydraulic, Inboard Vernier Pitch-roll | 0th | (5-61) (10-61) The actuator cylinder was qualified based on similarity to the 7-08243 actuator cylinder, which was preproduction tested, and by additional tests paragraph 4.4.1, 4.4.2, and 4.4.3 of the procurement specification 27-08519C. Additional tests are reported in test letter No. 9224 and TR No. 348. The 27-08573-1 unit is similar to the 7-08243-1 except that the 27-08573-1 units use high temperature O-rings. GD/A design group approved the 27-08573-1 on VAF MC 21809, dated 10-29-58. <u>NOTE</u> This unit is alternate and interchangeable with the Clemco 27-08573-801. | Complete Oct. 1958 | |
| | | QC DI | | | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|----------------|---|--------------|--|---------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08573-1 27-08573B 27-08519C Bohanan Company 50006-001 | Not to be used | Cylinder - Actuator, Hydraulic, Inboard | | (5-61) The Bohanan actuator 27-08573-1 is not to be used on any missile. The unit design has been rejected. Clemco (Interstate) is the only acceptable actuator. Refer to Clemco (Interstate) 27-08573-1 and Clemco (Interstate) 27-08573-3 in this section. | | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|--|---|--------------|--|----------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08573-3 27-08573 27-08519C Clemco | 77D 93D 103D 107D 109D 113D 130D 144D 152D 167D | Cylinder - Actuating, Vernier Hydraulic, Pitch-Roll | BOS | <p>(10-61)</p> <p>Approved based on similarity to the 27-08573-1 and 7-08243 units, which were preproduction tested, except that the 27-08573-3 design requirements specify nickel plated 4130 steel for the cylinder body and chrome plated 17-4 Ph stainless steel for the piston.</p> <p><u>NOTE</u></p> <p>This unit has successfully passed PET tests. It is considered, by the design group, to be satisfactory for flight use.</p> <p>At the present time no additional qualification testing is planned, since this design is similar to 7-08243 and 27-08573-1, except that high temperature O-rings are used and material change as indicated.</p> | See Remarks | |
| | | QC DI | | | | |

| MERCURY TEST SUMMARY | | | | | | |
|---|---|--|--------------|--|---------------|--------------|
| HYDRAULICS | | | | | | |
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08574-1 27-08574D 27-08519C Interstate 2778-1 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Cylinder - Actuator, Hydraulic, Outboard Vernier Yaw | Oth | (5-61) (10-61) The vernier actuator cylinder was qualified based on similarity to the 7-08283-3 actuator cylinder, which was preproduction tested, and by additional tests, paragraph 4.4.1, 4.4.3 of the procurement specification 27-08519C. Additional tests were reported in test letter report No. 9224-1. The 27-08574-1 unit is similar to the 7-08283-3 unit except that the 27-08574-1 units use high temperature O-rings. GD/A design group approved the 27-08574-1 on VAF MC 21808, dated 10-29-58. <u>NOTE</u> This unit is alternate an. interchangeable with the Clemco 27-08574-801. | Complete | Oct. 1958 |
| | | | | | OCDT | |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|--|--|--------------|---|----------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08574-801 27-08574 27-08519C Clemco | 77D 93D 103D 107D 109D 113D 130D 144D 152D 167D | Cylinder - Actuating, Vernier Hydraulic, Yaw | BOS | <p>(10-61)</p> <p>Approved based on similarity to 27-08574-1 and 7-08283-3, except that the 27-08574-801 design requirements specify nickel plated 4130 steel for the cylinder body, and chrome plated 17-4 Ph stainless steel for the piston.</p> <p style="text-align: center;"><u>NOTE</u></p> <p>1. This unit has recently successfully passed PET tests. Complete re-qualification of this unit is not planned because this design is similar to 7-08283-3, except for high-temperature O-rings and material change, as indicated.</p> <p>2. This unit is an alternate interchangeable unit with the 27-08574-1 if the -1 is manufactured by Interstate Engineering.</p> | See Remarks | |

QCDI

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|---|--|--------------|--|---------------|-----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08590-1 27-08590A 27-08529C Vickers Inc. AA60401-L-2 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Pump - Axial Piston, Hydraulic, Sustainer | PPT | (5-61) (10-61) Preproduction tests were performed on three pumps S/N MX 15984, S/N MX 15983, and S/N MX 15985 by the GD/A ETL labs to the basic specification. The PPT data are recorded in report number 7A2063, dated 7-29-59. GD/A design group approved PPT on VAF 40786, dated 11-23-59. Investigation of recent test failures of the unit have shown that casting flaws in the pump housing are resulting in pump mounting base failures. Units are being X-Rayed or Xylo inspected to determine which pumps are acceptable for flight. This item is alternate and interchangeable with the dash three (-3) unit. | Complete | Nov. 1959 |

| MERCURY TEST SUMMARY | | | | | HYDRAULICS | |
|---|---|---|---------------------|---|----------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-08590-3 27-08590A 27-08529D Vickers Inc. AA60401-L-2 | 77D 103D 107D 109D 113D 130D 144D 152D 167D | Pump - Axial Piston Hydraulic, Sustainer | See Re- marks | (12-61) The 27-08590-3 pump is similar to the 27-08590-1; however, the unit may be retested to satisfy revision D of the specification. Basic difference between the -1 and -3 is the -3 has a modification to the shaft to prevent possible mounting pad interference. Investigation of recent test failure of the unit has shown that casting flaws in the pump housing are resulting in pump mounting base failures. Units are being X-Rayed or Xyflo inspected to determine which pumps are acceptable for flight. This unit is alternate and interchangeable with the dash one (-1) unit. The vendor is presently conducting X-Ray inspection of all pump housing castings prior to assembly and delivery of pumps. | See Remarks | |

MERCURY TEST SUMMARY

HYDRAULICS

| EFFECTIVITY | | QUALIFIED BY | REMARKS | TEST SCHEDULE |
|---|--------------------|--------------|---|-------------------------|
| PART NUMBER | NOMENCLATURE | | | |
| 27-85314-817 | Sustainer Servo | Oth | (10-61) The 27-85314-817 sustainer servo cylinder assembly consists of a 27-08563-3 servo cylinder, 27-04208-1 servo valve, 27-08564-803 filter, and 27-85389-7 adaptor. The -817 replaced the 27-85314-811 assembly which utilized the 27-08564-801 filter which was subject to body cracks during vibration tests. RAR 92-10-617, dated 7-6-60, ECP 529 removed the -801 filters from all D and E series missiles still in existence. | Complete May 1961 |
| - - - - - | Cylinder Assembly, | | | |
| - - - - - | Yaw | | | |
| GD/A | | | | |
| - - - - - | | | | |
| - - - - - | | | | |
| - - - - - | | | | |
| - - - - - | | | | |
| - - - - - | | | | |
| - - - - - | | | | |
| <p style="text-align: center;"><u>NOTE</u></p> <p>1. For qualification of individual components listed above, see the components listed in Hydraulic and Autopilot Sections.</p> <p>2. Release records show a -811 assembly as being effective for 77D, 88D, 93D, and 100D, although 88D, 93D, and 100D were flown with 27-08564-803 filters, which were replaced by AMR/RAR mentioned above. Missile 77D will also be modified to use the -803 filter, but again the installation dash number as in 88D, 93D, and 100D, will not be re-identified for just a paperwork change.</p> | | | | |
| | | | | |

| MERCURY TEST SUMMARY | | | | HYDRAULICS | | TEST SCHEDULE |
|---|-------------|--------------------|--------------|---|-------------------------|------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | START | |
| 27-85314-819 | 77D | Sustainer Servo | Oth | (10-61) | Complete May 1961 | |
| - - - - - | 88D | Cylinder Assembly, | | | | |
| - - - - - | 93D | Pitch | | | | |
| GD/A | 100D | | | | | |
| - - - - - | 103D | | | | | |
| - - - - - | 107D | | | | | |
| - - - - - | 109D | | | | | |
| - - - - - | 113D | | | | | |
| - - - - - | 130D | | | | | |
| - - - - - | 144D | | | | | |
| - - - - - | 152D | | | | | |
| - - - - - | 167D | | | | | |
| | | | | <p>NOTE</p> <p>1. For qualification of individual components listed above, see the components listed in Hydraulics and Autopilot Sections.</p> <p>2. Release records show a -813 assembly as being effective for 77D, 88D, 93D, and 100D, but 88D, 93D, and 100D were flown with 27-08564-803 filters which were replaced by AMR/RAR, mentioned above. This assembly replacement changed the -813 assembly to -819. Missile 77D will also use the -803 filter, but again, the installation dash number, as in 88D, 93D, and 100D, will not be reidentified for just a paperwork change.</p> | | |
| | | | | QC DI | | |

MERCURY

MAJOR CRITICAL COMPONENTS

PNEUMATICS

All pneumatic major critical components have been approved. Two components, 27-08020-3 and 27-08116-11, were approved on the basis of similarity to other components which had been preproduction tested. The other components were preproduction tested.

| MERCURY TEST SUMMARY | | | | | PNEUMATICS | | | |
|--|---|---|----------|-------|------------|---------|---|----------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-08020-3 7-08020A 7-08204 N Peacock Engine- ering R-50502-105 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Valve Assembly, LO 2 Tank, Relief and Shutoff | | | | BOS | (5-61) The 27-08020-3 valve was approved on the basis of similarity to 27-08020-1 per VAF 27-08020-3-LA-002, dated 3-17-61. The GD/A Design Group approved flight proof testing of 27-08020-1 per Wyle Lab. Report number 9305 in VAF 27-08020-1-LA-002, dated 12-12-60. Flight proof testing consisted of: 1. Temperature 2. Vibration to 6G 3. Life 4. Proof Pressure 5. Acceleration One sample of the 27-08020-1 was tested. The valves differ only in mounting flange configuration. (11-61) Item was approved per revision M of the specification. Present specification is revision N. The N revision added vendor and vendor part numbers. | Completed March 1961 |
| | | QCDI | | | | | | |

| MERCURY TEST SUMMARY | | | | PNEUMATICS | | | | |
|---|-------------|------------------------|----------|------------|---------|--|------------|-----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | | | | | START | COMPL |
| 27-08103-3 | 77D | Valve-Pressure Relief, | | | PPT | (5/61) | Completed | Dec. 1959 |
| - - - - | 88D | Oxidizer Tank | | | | The 27-08103-3 valve was preproduction tested and results reported in Test Report 1078. | | |
| 27-08103E | 93D | | | | | GD/A design group approved the 27-08103-3 valve in V\F MC 34447, dated 10-2-59. | | |
| B. H. Hadley Co. | 100D | | | | | Three samples were tested. | | |
| 10525-5 | 103D | | | | | (11-61) | | |
| | 107D | | | | | Item was tested to D revision of the Specification. Present specification is revision E. The E revision added vendor and vendor part number. | | |
| | 109D | | | | | | | |
| | 113D | | | | | | | |
| | 130D | | | | | | | |
| | 144D | | | | | | | |
| | 152D | | | | | | | |
| | 167D | | | | | | | |
| | | QCDI | | | | | | |

27-08103

| MERCURY TEST SUMMARY | | | | | | | | | | PNEUMATICS | |
|---|-------------|-----------------------|----------|-----|-------|-----------|---------|--|------------|------------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | | |
| | | | ENGR | INS | INSTL | | | | START | COMPL | |
| 27-08109-1 | 77D | Transducer - | | | | | PPT | (5-61) | Complete | Oct. 1959 | |
| - - - - | 88D | Differential Pressure | | | | | | The 27-08109-1 transducer was preproduction tested (Reports 25-227 and 25-227, Addendum I). | | | |
| 27-08109D | 93D | | | | | | | GD/A design group approved the 27-08109-1 unit tests, specification 27-08021 on VAF's MC 29716, dated 4-8-59, MC 33612, dated 6-17-59 and MC 37720, dated 9-17-59. | | | |
| Crescent Engrg. | 100D | | | | | | | Two samples were tested. | | | |
| B9-5001 | 103D | | | | | | | (11-61) | | | |
| | 107D | | | | | | | Item was tested to C revision of the specification. Present specification is revision D. The D revision added vendor and vendor part number. | | | |
| | 109D | | | | | | | | | | |
| | 113D | | | | | | | | | | |
| | 130D | | | | | | | | | | |
| | 144D | | | | | | | | | | |
| | 152D | | | | | | | | | | |
| | 167D | | | | | | | | | | |
| | | QCPI | | | | | | | | | |

[illegible]

| MERCURY TEST SUMMARY | | | | PNEUMATICS | | | | |
|---|---|--|----------|------------|-----------|---------|--|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-08115-7 --- -- -- 27-08115K Airite Products 6320 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Sphere - Helium Storage, Missileborne | | | | PPT | (5/61) The 28-08115-7 Sphere was preproduction tested (Wyle Test Report 5959, unit S/Ns 5, 9, and 10). GD/A design group has approved testing of the 27-08115-7 Sphere per Specification 27-08115J in VAF 27-08115-7-1A-001, dated 2-17-61. Three samples were tested. (11-61) Item was tested to J revision of the specification. Present specification is revision K. Revision K added vendor and vendor part number. | Completed Feb. 1961 |
| 27-08115 | | QCDI | | | | | | |

| PNEUMATICS | | | | | | | | | | |
|---|---|------------------------------------|----------|-----|-------|-----------|---------|---|---------------------------|-------|
| MERCURY TEST SUMMARY | | | | | | | | | | |
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPE | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | IDE | INSTL | | | | START | COMPL |
| 27-08116-11 -- -- -- -- 27-08116D Robertshaw Fulton 1098-22001 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Valve - Shutoff, Motor Operated | | | | | BOS | (5/61) The 27-08116-11 valve was approved on basis of similarity to 7-08234-9 in VAF 40651, dated 12-59. Preproduction test results of 7-08234-9 were reported in Robertshaw Fulton Test Report 1098-22001 and approved in VAF MC 25653, dated 1-22-59. The 27-08116-11 valve per specification change C was approved in VAF MC 52487, dated 12-59. (11-61) Item was approved per C revision of the specification. Present specification is revision D. Revision D added vendor name and vendor part number. | Completed Dec. 1959 | |
| | | QC DI | | | | | | | | |

| MERCURY TEST SUMMARY | | | | PNEUMATICS | | | | | |
|---|---|--|------|------------|-------|---------|---|---------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD | | | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | IDE | INSTL | | | START | COMPL |
| 27-08245-13 27-08245J 27-08101M (27-08101-25) B. H. Hadley Co. 10704-7 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Regulator Assembly - Pressur., Oxidizer Tank | | | | BOS | (5/61) The 27-08245-13 (27-08101-25) regulator is specially tested but otherwise identical to the 27-08245-3 regulator. The 27-08245-13 regulators are selected for best transient response and maximum reliability for specific use on the Mercury program. Similarity of the 27-08245-3 regulator to the 27-08101-1 is established by VAF 41967. Two 27-08101-1 regulators were preproduction tested per Test Report numbers 1080 and 1081, and the results approved by VAF's 41254 and 41255, dated 12-7-59. (11-61) The item was approved per revision K of the specification. Revision M added vendor and vendor part number. | Completed Jan. 1960 | |
| | | QC DI | | | | | | | |

27-08245

| MERCURY TEST SUMMARY | | | | PNEUMATICS | | | | | |
|---|---|---|----------|------------|-----------|---------|---|---------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | INSTL | | | | START | COMPL |
| 27-08246-11 27-08246K 27-08102K (27-08102-17) B. H. Hadley Co. 10705-7 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Regulator Assembly - Pressure, Fuel Tank | | | | BOS | (5/61) The 27-08246-11 regulator is specially tested but otherwise identical to the 27-08246-5 regulator. The 27-08246-11 regulators are selected for best transient response, and maximum reliability for specific use on the Mercury program. Similarity of the 27-08246-5 regulator to 27-08102-1 is established by VAF 41966. PPT of 27-08102-1 was approved by VAF 41256 per Test Reports 1082 and 1083, dated 10-12-59. Two units were tested. (11-61) Item was approved per H revision of the specification. Present specification is K revision. K change revised some temperature requirements and pressures, but all changes made requirements less severe than previously. | Completed Jan. 1960 | |
| | | QC DI | | | | | | | |

| MERCURY TEST SUMMARY | | | | | PNEUMATICS | | | | | |
|--|---|--------------------------------|----------|-----|------------|-----------|---------|---|---------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | IDR | INSTL | | | | START | COMPL |
| 27-08575-1 27-08575A 27-08520B Walter Kiddie Co. 891314 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Sphere - Pneumatic Pressure | | | | | PPT | (6-61) The 27-08575-1 Sphere was preproduction tested. Results were reported in TR 1045 Addendum and R 1333. GD/A design group approved the 27-08575-1 Sphere /Spec 27-08520 on VAF MC 25575 dated 1-17-59 and VAF MC 40798 dated 11-23-59. | Completed Nov. 1959 | |
| 27-08575 | | | | | | | | | | |

MERCURY

MAJOR CRITICAL COMPONENTS

PROPULSION

All components listed in this section have been preproduction tested or qualified on the basis of similarity to previously qualified units.

| MERCURY TEST SUMMARY | | | | PROPULSION | | | |
|---|--|------------------------------|-----------|------------|--|-------------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | NOMENCLATURE | MAD APPR ENGR INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | | | | START | COMPL |
| 7-02229-13 - - - 7-02229P Reaction Motors Inc. 311193 | Valve, Fuel Discon- nect (Forward Section) | | | PPT | (6/61) One unit (serial number 16) qualified by Reaction Motors Inc. The preproduction test was recorded in Report 67 (addendum A and B) and 70, appen- dix A and B. CV/A design group approved VAF 49675 and 7-02229-B-LA-001. The preproduction tests deviated from 7-00209B in vibration tests ($2G \pm 10\%$ rather than $2G + 10\% - 0\%$) and the sand and dust test was performed to MIL-E-5272. | Compl eted Dec. 1960 | |
| | QC DI | | | | | | |

| MERCURY TEST SUMMARY | | | | PROPULSION | | | |
|---|---|---|----------|------------|-------|--|----------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | REMARKS | TEST SCHED START COMPL |
| | | | ENGR | IDE | INSTL | | |
| 7-02281-15 7-02281E 7-02298M B.H. Hadley Co. 10576-15 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Valve, Sustainer Fuel Shutoff, Power Operated | | | | (5/61) Approved on the basis of similarity to vendor's P/N 10576 plus additional tests to procurement specification requirements. Valves differ only as noted on vendor drawing and VIR M7-3228. The change included an improved actuator and a change in the Restrictor Office CV/A design group approved the 7-02281-15 unit as noted on VAF MC 18607 and VIR M7-3228, dated 4-15-59. | Completed April 1959 |
| 7-02281 | | QCDI | | | | | |

| MERCURY TEST SUMMARY | | | | PROPULSION | | | | |
|---|-----------------------------------|---------------------------------|----------|------------|-----------|---------|---|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPB | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGB | INSTL | | | | START/COMPL |
| 7-02315-3 - - - 7-02315H Airesearch Mfg. Co. 121020-1 | 77D 88D 93D 100D 103D | Valve - Fill and Drain, Fuel | | | | BOS | (5/61) Approved on basis of similarity to the 121020 Airesearch valve. The -3 has a strengthened butterfly and shaft and a lubricated seal. Proof of similarity submitted by vendor. Approved on VAF 24200, dated 9-20-60 by and VAF 46317, dated 9-20-60 by CV/A design group. | Completed July 1960 |
| | | QCD1 | | | | | | |

7-02315

| MERCURY TEST SUMMARY | | | | PROPULSION | | | | | |
|---|-------------|-----------------------------------|----------|------------|-----------|---------|--|--------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | IDE | | | | INSTL | START |
| 7-22232-805 | 77D | Line Assembly, Sustainer, Fuel | | | | BOS | (6-61) Approved on the basis of similarity to the 7-22232-1 and -3. The -1 was qualified by design evaluation tests conducted on one specimen by GD/A tests laboratory. The tests are recorded in report 7A1231 dated 31 July 1958. The -805 has changes on the holes in the flanges, addition of a boss on one duct and slight dimensional changes on two elbows. | Completed Aug 1958 | |
| - - - - - | 88D | | | | | | | | |
| - - - - - | 93D | | | | | | | | |
| - - - - - | 100D | | | | | | | | |
| GD/A | 103D | | | | | | | | |
| 7-22232-805 | 107D | | | | | | | | |
| | 109D | | | | | | | | |
| | 113D | | | | | | | | |
| | 130D | | | | | | | | |
| | 144D | | | | | | | | |
| | 152D | | | | | | | | |
| | 167D | | | | | | | | |
| | | QC DI | | | | | | | |

7-22232

| MERCURY TEST SUMMARY | | | | PROPULSION | | | | |
|---|----------|-----------------------|-------------|---------------------|-----------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | INITIALS | NOMENCLATURE | MAD APPR | ENGR ID INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | | START COMPL |
| 7-23205-815 | 77D | Inlet Manifold, | | | | PPT | (6-61) | Completed |
| - - - - - | 88D | Booster Liquid Oxygen | | | | | Approved on the basis of preproduction | June |
| - - - - - | 93D | | | | | | tests conducted on two specimens by GD/A | 1959 |
| GD/A | 100D | | | | | | test laboratory. The tests are recorded | |
| 7-23205-815 | 103D | | | | | | in report 7A2085 dated 6-27-59. | |
| | 107D | | | | | | | |
| | 109D | | | | | | | |
| | 113D | | | | | | | |
| | 130D | | | | | | | |
| | 144D | | | | | | | |
| | 152D | | | | | | | |
| | 167D | | | | | | | |
| | | QCDI | | | | | | |

| MERCURY TEST SUMMARY | | | | | PROPULSION | | | |
|---|------------|-----------------|----------|-------|------------|---------|---|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFICIENCY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 7-23419-801 | 77D | Inlet Manifold, | | | | BOS | (6-61) | Completed Sept 1959 |
| - - - - - | 88D | Booster Fuel | | | | | Approved on the basis of similarity to the 7-23419-5, which was qualified by evaluation tests conducted on one specimen by GD/A test laboratory. The test was recorded in report 7B 1665-1 dated 8-15-59 and report 7B 1665-2 dated 9-12-59. | |
| - - - - - | 93D | | | | | | | |
| GD/A | 100D | | | | | | | |
| 7-23419-801 | 103D | | | | | | | |
| | 107D | | | | | | | |
| | 109D | | | | | | | |
| | 113D | | | | | | | |
| | 130D | | | | | | | |
| | 144D | | | | | | | |
| | 152D | | | | | | | |
| | 167D | | | | | | | |
| | | QCDI | | | | | | |

[illegible]

| MERCURY TEST SUMMARY | | | | PROPULSION | | | |
|---|---------------|----------------------------|----------------------|------------|---------|---|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | FUNCTIONALITY | NOMENCLATURE | MAD APPR INSTL | CHIT COMP | QUAL BY | TEST SCHED | |
| | | | | | | START | COMPL |
| 27-02102-829 | 77D | Valve Assembly, Fill | | | | | Completed Dec. 1960 |
| - - - - | 88D | and Drain, LO ₂ | | | 0th | (6-61) | |
| 27-02102K | 93D | | | | | Approved on the basis of similarity to 27-02102-827 which was preproduction tested and used on D series missiles. | |
| Airessearch Mfg. Co. | 100D | | | | | In addition, supplemental qualification tests were conducted on two 27-02102-829 units (serial numbers A and B) by Airessearch. The -829 valve is similar to the -827 valve except a sealed metal box completely encloses the actuator; the electrical leads are potted; the actuator is rotated 180°; and the housing is cast. | |
| 121072-1 | 103D | | | | | Airessearch Test Report AE-7456-R covers the tests on the -829 valve and Test Report AE-7331-R covers the earlier test on the -827 part. | |
| | 107D | | | | | CV/A Design Group approved the valve on VAF 52217, dated 12-12-60. | |
| | 109D | | | | | Deviations from 7-00209B are as follows: | |
| | 113D | | | | | 1. Temperature, altitude and humidity. | |
| | 130D | | | | | 2. Pressure reduced from 30 inches Hg. to 20.58 inches Hg. rather than 1 mm. Hg. | |
| | 144D | | | | | 3. Four hour test at +40°F deleted. | |
| | 152D | | | | | Tests added: | |
| | 167D | | | | | 1. Pressure Drop and Dynamic Flutter. 2. Proof Pressure. 3. Flush and Purge System Test. 4. Airborne Valve Actuator Test. 5. Ground Support Valve Test. | |
| QCDI | | | | | | | (Continued on next page) |

| MERCURY TEST SUMMARY | | | | PROPULSION | | | | | |
|---|-------------|--------------|-------------|----------------------|-----------|---------|--|---------------------------|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | ENGR IDE INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | START COMPL |
| | | | | | | | | Completed Dec. 1960 | |
| 27-02102-829 (Continued) | | QC DI | | | | | (Continued) Tests Added: 6. Burst Pressure Test 7. Low Temperature with LN ₂ test. 8. Storage Test. 9. Deflection Load Test. | | |

27-02102

| MERCURY TEST SUMMARY | | | | PROPULSION | | | |
|---|----------|-------------------|------|------------|---------|---|----------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | INITIALS | NOMENCLATURE | MAD | | QUAL BY | REMARKS | TEST SCHED START COMPL |
| | | | APPR | ENGR | | | |
| 27-02248-1 | 77D | Valve-Booster, | | | PPT | (5/61) | Completed March 1961 |
| - - - - | 88D | Disconnect, L02 | | | | Qualified by preproduction tests conducted on 2 units, serial numbers 1 and 2, by Reaction Motors Inc. The preproduction test was recorded in Test Reports CMP 102, and appendices A, B, and C, and Test Report 1221-1. | |
| - - - - | 93D | (Forward Section) | | | | CV/A design group approved PPT on 3-1-61. Tests performed deviated from book specification 27-02248D T-A-H requirements, paragraph 4.4.2. | |
| Reaction Motors | 100D | | | | | (8-61) | |
| Inc. | 103D | | | | | Test deviation was approved by VAF53587, dated 8-5-60. | |
| 310722 | 107D | | | | | | |
| | 109D | | | | | | |
| | 113D | | | | | | |
| | 130D | | | | | | |
| | 144D | | | | | | |
| | 152D | | | | | | |
| | 167D | | | | | | |
| | | QC DI | | | | | |

| MERCURY TEST SUMMARY | | | | PROPULSION | | | |
|---|------------------|-----------------|-------|------------|-------|---------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | INITIALS DATE | NOMENCLATURE | MAD | | | REMARKS | TEST SCHED START COMPL |
| | | | ENGR | IDF | INSTL | | |
| 27-02248-3 | 77D | Valve-Booster, | | | | (5/61) | <p>Qualified by preproduction tests conducted on 2 units, serial numbers 1 and 2, by Reaction Motors Inc. The preproduction test was recorded in Test Reports CMP 102 (appendices A, B, and C) and Test Report 1221-1.</p> <p>CV/A design group approved the preproduction tests on 3-1-61.</p> <p>Tests performed deviated from book specification 27-02248D T-A-H requirements, paragraph 4.4.2.</p> <p>(8-61)</p> <p>Test deviation was authorized by VAF53588, dated 8-5-60.</p> |
| - - - | 88D | Disconnect, L02 | | | | | |
| 27-02248D | 93D | (Aft Section) | | | | | |
| Reaction Motors | 100D | | | | | | |
| Inc. | 103D | | | | | | |
| 310723 | 107D | | | | | | |
| | 109D | | | | | | |
| | 113D | | | | | | |
| | 130D | | | | | | |
| | 144D | | | | | | |
| | 152D | | | | | | |
| | 167D | | | | | | |
| 27-02248 | | | QC DI | | | | |

MERCURY

MAJOR CRITICAL COMPONENTS

PROPELLANT UTILIZATION AND LOADING

None of the items in the propellant utilization system require further approval action prior to flight.

The liquid oxygen transducer assemblies are part of the propellant loading system and replace assemblies used on early D series missiles. No further approval action prior to flight is necessary for the liquid oxygen transducer assemblies.

| MERCURY TEST SUMMARY | | | | PROPELLANT UTILIZATION AND LOADING | | | | | |
|---|-------------|-----------------------|----------|------------------------------------|-----------|---------|--|-------------|------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | INSTL | | | | START COMPL | TEST SCHED |
| 27-04240-809 | 77D | Transducer Assembly - | | | | Oth | (11-61) | Complete | |
| 27-04240E | 88D | Liquid Oxygen | | | | | This unit is similar (structurally modified) to the -801 assembly, which was preproduction tested but failed shock and vibration tests, test report 27A126. The -809 unit was qualified by similarity to the -801 unit plus proof cycle, shock, and vibration tests, test report (27A1136). The life test was based on similarity to the -811 unit which is covered in this section. | | |
| 27-04239C | 93D | | | | | | | | |
| GD/A | 103D | | | | | | | | |
| 113-809100-1 | 107D | | | | | | | | |
| | 109D | | | | | | | | |
| | 113D | | | | | | | | |
| | 130D | | | | | | | | |
| | 144D | | | | | | | | |
| | 152D | | | | | | | | |
| | 167D | | | | | | | | |
| | | | | | | | The 7-43021-813 unit was used on the 100D flight. | | |

| MERCURY TEST SUMMARY | | | | PROPELLANT UTILIZATION AND LOADING | | | |
|---|---|--|------------------------------|------------------------------------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR ENGR INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 27-04240-811 27-04240-E 27-04239 C GD/A 113-811100-1 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 162D 167D | Transducer Assembly - Liquid Oxygen | | | OTH | (11-61) This unit is similar (structurally modified) to the -801 assembly, which was pre-production tested, test report 27A126, but failed shock and vibration tests. The -811 unit was qualified by similarity to the -801 unit plus proof cycle, shock, vibration, and life tests, test report (27A1136). | Complete |
| | | QCDI | | | | | |

MERCURY

MAJOR CRITICAL COMPONENTS

ELECTRICAL

The electrical system is composed of batteries, inverters, power changeover switch, distribution harnesses, and miscellaneous switches, relays, and connectors.

All items have been preproduction, flight proof tested, and/or approved on the basis of similarities, with exception of the harnesses and abort sensing relay.

The harnesses are fabricated to MIL-W-8160 specification requirements.

Flight proof testing on the abort sensing relay 27-61147-805 is complete and report is being prepared.

In some instances, where items have not conformed to MIL-I-6181B and MIL-I-26600 test requirements, deviation requests have been processed and submitted for AFBSD approval.

The noise generated by action of the thermostatic heater switches used in the missileborne batteries exceeds the limits (conducted interference, and radiated interference) of MIL-I-6181B and MIL-I-26600 test requirements. The battery heaters and the thermostatic heater switches are nonoperative during flight. During countdown operation the heaters cycle on and off at intervals of about 10 to 15 minutes; the excessive noise exists for less than one second, when switches open and close.

| MERCURY TEST SUMMARY | | | | ELECTRICAL | | | |
|---|-------------|----------------------|------|------------|------|---|----------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD | | | REMARKS | TEST SCHED START COMPL |
| | | | ENGR | INSTL | APPR | | |
| 7-06344-9 | 77D | Staging Plug, | | | | (5/61) | Completed March 1961 |
| 7-06344 | 88D | Propulsion, Electri- | | | | Approved based on similarity to | |
| - - - - - | 93D | cal | | | | 7-06344-1 (200X-30-3) plug which was preproduction tested. | |
| Amphenol Corp. | 100D | | | | | Design group approved the unit on VAF | |
| 200X30-5205 | 107D | | | | | MC 7-06344-9-LA-001, dated 1-19-61. | |
| | 109D | | | | | | |
| | 113D | | | | | | |
| | 130D | | | | | | |
| | 144D | | | | | | |
| | 152D | | | | | | |
| | 167D | | | | | | |
| | 103D | | | | | | |
| | | QC DI | | | | | |

| MERCURY TEST SUMMARY | | | | ELECTRICAL | | | | |
|---|-------------|---------------------|----------|------------|-----------|---------|---|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 7-06345-5 | 77D | Staging Receptacle, | | | | BOS | (5/61) | Completed |
| 7-06345 | 88D | Propulsion | | | | | | Jan. |
| - - - | 93D | | | | | | | 1961 |
| Amphenol Corp. | 100D | | | | | | The staging receptacle was approved based on similarity to 7-06345-3 (200X-30-4) receptacle which was preproduction tested. | |
| 200X-30-5004 | 107D | | | | | | Design group approved the unit on VAF MC 7-06345-5-LA-001 dated 1-19-61. | |
| | 109D | | | | | | | |
| | 113D | | | | | | | |
| | 130D | | | | | | | |
| | 144D | | | | | | | |
| | 152D | | | | | | | |
| | 167D | | | | | | | |
| | 103D | | | | | | | |
| | | QCDI | | | | | | |

7-06345

| MERCURY TEST SUMMARY | | | | ELECTRICAL | | | | |
|---|-------------|--------------|----------|------------|---------|---|------------|----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | IDR | | | INSTL | START |
| 7-06380-3 | | Battery, RSC | | | BOS | (5-61) Approved based on similarity to 7-06380-1 which has been flight proof tested at GD/A. (Test Report 7A1607-R, dated 1-30-59). | Completed | Jan 1959 |
| - - - - | 77D | | | | | NOTE: Two specimens were tested. First specimen, serial number 9, failed;* second specimen, serial number 13, passed flight proof test requirements. | | |
| 7-03236 | 88D | | | | | Deviation request, ECP-CAC-107A-334-80R2 has been submitted to waive some test requirements of MIL-I-26800. | | |
| Yardney Corp | 93D | | | | | | | |
| 5500 | 100D | | | | | | | |
| | 103D | | | | | | | |
| | 107D | | | | | | | |
| | 109D | | | | | | | |
| | 113D | | | | | | | |
| | 130D | | | | | | | |
| | 144D | | | | | | | |
| | 152D | | | | | | | |
| | 167D | | | | | | | |
| | | QC DI | | | | * Battery voltage dropped below minimum requirements (22vdc) after 6 minutes of discharging at the rate of 2.0 amperes. Present specification requirements calls for discharging at the rate of <u>1.25 amperes</u> . | | |

7-06380

| MERCURY TEST SUMMARY | | | | | ELECTRICAL | | | |
|---|-------------|------------------|----------|-------|------------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-06106-801 | 77D | Switch Assembly, | | | | PPT | (5-61) | Completed |
| - - - - | 88D | Power Changeover | | | | | Two specimens preproduction tested at | March |
| 27-06113-3 | 93D | | | | | | GD/A (Test Report 7A1871R, dated 3-19-59). | 1959 |
| Kinetic | 100D | | | | | | First specimen has been subjected to | |
| M-160-4 | 103D | | | | | | temperature, altitude, humidity, vibra- | |
| | 107D | | | | | | tion, acceleration and life tests. | |
| | 109D | | | | | | Second specimen has been subjected to RF, | |
| | 113D | | | | | | fungus resistance, sand and dust and salt | |
| | 130D | | | | | | atmosphere tests. | |
| | 144D | | | | | | (12-61) | |
| | 152D | | | | | | <u>NOTE</u> | |
| | 167D | | | | | | In accordance with design group request | |
| | | | | | | | only Kinetic switch is to be used on | |
| | | | | | | | Mercury missiles. | |
| | | QCDI | | | | | | |

27-06106

| MERCURY TEST SUMMARY | | | | ELECTRICAL | | | |
|---|-------------|--------------|----------|------------|-------|---|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | REMARKS | TEST SCHED START COMPL |
| | | | ENGR | IDE | INSTL | | |
| 27-06358-1 | 88D | Battery, TLM | | | | (5-61) | See Remarks |
| - - - - 27-06358 Eagle Picher Co. GAP-4067 | | | | | | Electrical Design Group states that the specimen has been flight proof tested and test report has been reviewed and approved. NOTE: A deviation request ECP-CAC-107A-354-R0R2 has been submitted to waive some of the test requirements of MIL-I-6181. | |

27-06358

| MERCURY TEST SUMMARY | | | | | | | | | | ELECTRICAL | |
|---|-------------|--------------------|------|-------|------|---------|---|------------|-------------|------------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD | | | QUAL BY | REMARKS | TEST SCHED | START COMPL | | |
| | | | ENGR | INSTL | APPR | | | TEST SCHED | | | |
| 27-06359-3 | 77D | Battery Pack, Main | | | | PPT | (5-61) Preproduction tested by vendor | Completed | | | |
| - - - - - | 88D | Missile Power | | | | | LA158140. Deviation request, ECP CAC- | | | | |
| 27-06359 | 93D | | | | | | 107A-334-80R2 has been | | | | |
| Eagle Picher | 100D | | | | | | submitted to waive some of the test re- | | | | |
| Cap | 103D | | | | | | quirements of MIL-I-6181. | | | | |
| 4000A | 107D | | | | | | | | | | |
| | 109D | | | | | | | | | | |
| | 113D | | | | | | | | | | |
| | 130D | | | | | | | | | | |
| | 144D | | | | | | | | | | |
| | 152D | | | | | | | | | | |
| | 167D | | | | | | | | | | |
| 27-06359 | | QC DI | | | | | | | | | |

| MERCURY TEST SUMMARY | | | | ELECTRICAL | | TEST SCHEDULE | |
|---|---|---------------------------------------|--------------|--|------------------------------|---------------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | START | COMPL | |
| 27-61147- 803 - - - - GD/A 27-61147 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Relay Installation - Abort Sensing | FPT | (12-61) Consists of the following commercial parts: Relay 97-37002-006 Diode 87-19000-006 Receptacle 81-55900-818 Report FR-9-4-335.1 was reviewed and approved. <u>NOTE</u> Unit failed to conform to MIL-I-26600 test requirements. Deviation request,ECP-CAC-107A-334-129 has been submitted to waive some of the test requirements of MIL-I-26600. | Complete (See Remarks) | | |
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| MERCURY TEST SUMMARY | | | | | | | | | | ELECTRICAL | |
|---|---|--------------------------------------|----------|-----|-------|-----------|---------|---|-----------------|-------------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | START COMPL | |
| | | | ENGR | IDE | INSTL | | | | Not Required | | |
| 27-61147-805 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Relay Installation, Abort Sensing | | | | | BOS | Approved based on similarity to 27-61147-805 assembly which is being flight proof tested. | Not Required | | |

MERCURY
MAJOR CRITICAL COMPONENTS
TELEMETRY

There are six items in this section. Five were approved based on similarity to previously qualified items. One item, the lightweight TLM package for 100D, was flight proof tested and approved.

A deviation, ECP CAC-107A-334-98, has been approved for all 27-12290 assemblies.

| MERCURY TEST SUMMARY | | | | TELEMETRY | | | | | |
|---|-------------|--------------|-------------|----------------------|-----------|---------|--|------------|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | ENGR IDE INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | START COMPL |
| | | | | | | | | Completed | |
| 27-11541-866 - - - - 7-01658 Bendix - - - - | 88D | TLM Package | | | | BOS | (5-61) Approved based on similarity to -1 which has been flight proof tested plus additional life test with modified commutator motor installed. Partially meets MIL-I-6181 test requirements. Similarity approved by Design Group. | | Completed |

| MERCURY TEST SUMMARY | | | | | TELEMETRY | | | |
|---|-------------|------------------------|-------------|----------------------|-----------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | ENGR IDE INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | | START COMPL |
| 27-11616-829 | 88D | TLM, Accessory Package | | | | BOS | (5-61) Approved based on similarity to 7-11310 which has been flight proof tested except for deviation from -65°F storage temperature. Partially meets MIL-I-6181 test requirements. Similarity approved by Design Group. | Completed |
| 27-01216 | | | | | | | | |
| GD/A | | | | | | | | |
| 27-11616-829 | | | | | | | | |

27-11616

| MERCURY TEST SUMMARY | | | | TELEMETRY | | | | |
|---|-------------|-----------------------|----------|-----------|-----------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-12210-809 | 100D | TLM Package, RF #2 | | | | BOS | (5-61) Approved based on similarity (change in the oscillator and lowered RF power output) to 27-11541 which has been flight proof tested. Partially meets MIL-I-6181 test requirements. Similarity approved by Design Group. | Completed |
| - - - - - | | | | | | | | |
| 27-01214 | | | | | | | | |
| Bendix | | | | | | | | |
| - - - - - | | | | | | | | |

| MERCURY TEST SUMMARY | | | | TELEMETRY | | | | |
|---|-------------|---------------------------|------|-----------|-----------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | APPR | INSTL | | | | START COMPL |
| 27-12290-3 | 100D | TLM Package, Light Weight | | | | FPT | (10-61) Consists of a transmitter built by Texas Instruments and a signal conditioner built by GD/A. Both have been separately flight proof tested to 7-00210B except for a low temperature test requirement of -30°F, and a non-operating test at 0°F. | Complete |
| - - - - - | | | | | | | (10-61) The signal conditioner exceeded the limits of conducted interference and audio frequency conducted susceptibility per MIL-I-26600. A deviation request, ECP CAC-107A-334-98 (CCN 1302 for -4 contract; CCN 663 for -299 contract; CCN 74 for -635 contract; CCN 58 for -699 contract), has been approved for all 27-12290 assemblies. | |
| 27-01214 GD/A | | | | | | | Testing has been completed and the report has been reviewed and approved. | |
| 27-12290-3 | | | | | | | | |

| MERCURY TEST SUMMARY | | | | | TELEMETRY | | |
|---|-------------|------------------------------|----------------------------------|-----------|-----------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR ENGR IDE INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 27-12290-803 - - - - 27-01214 GD/A 27-12290-803 | 93D | TLM Package, Light Weight | | | BOS | (10-61) Approved based on similarity to 27-12290-3, which was flight proof tested. (Refer to -3 remarks). Similar to 27-12290-3 except for rework of transmitter and RF filter to change frequency. | Complete |

TELEMETRY

MERCURY TEST SUMMARY

| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
|---|---|-------------------------------|--------------|--|---------------|-------|
| | | | | | START | COMPL |
| 27-12290-809 - - - - 27-01214 GD/A 27-12290-809 | 77D 103D 107D 130D 144D 152D 167D 109D 113D | TLM Package - Light Weight | BOS | (10-61) (12-61) Approved based on similarity to 27-12290-3, which was flight proof tested. (Refer to -3 remarks.) Similar to 27-12290-3 except for rework of transmitter and RF filter to change frequency. The shockmounts were also changed from the spring-type to hard rubber. | Complete | |

MERCURY
MAJOR CRITICAL COMPONENTS
RANGE SAFETY

This section covers a command set, arming device, destructor, three-second destruct delay unit and power and signal control unit.

All items have been preproduction tested, flight proof tested and/or approved on the basis of similarity to units that have been tested.

| MERCURY TEST SUMMARY | | | | RANGE SAFETY | | | | |
|--|---|--------------------|----------|--------------|-------|--|------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | REMARKS | TEST SCHED | |
| | | | ENGR | IDE | INSTL | | START | COMPL |
| 27-04306-3 27-04306A (27-04230F) Beckman and Whitley 175-9D-1 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | RSC, Destruct Unit | | | | (A-61) Approved on basis of similarity to 7-04237 per Article LA 27694A, dated 5-7-59, and VAF MC 31,407, dated 5-8-59. Additional tests consisting of shock, operating vibration and operating acceleration have been performed at GD/A as reported in Test Report 7A1822. NOTE: Deviation request, ECP-CAC 107A-334-36 has been submitted to waive some of the test requirements of MIL-I-26600. The deviation request has been approved only for Contract AF 04(647)-299 by CCN 253, MSN 61, BMC-61. | Completed | |
| | | QC DI | | | | | | |

| MERCURY TEST SUMMARY | | | | RANGE SAFETY | | | | |
|---|---|------------------------------|------|--------------|-----------|---------|---|------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | APPR | ENGR | | | | START |
| 27-36014-1 - - - - (7-03241) GD/A 27-36014-1 | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Command Set, Range Safety | | | | FPT | (5-61) Limited flight proof tested. Modified module in audio section of GFE P/N 319600, MARK I has only been vibration tested. Modification decreases gain by a factor of three (3) and increases linearity. Testing approved by Design Groups. | Completed |

[illegible]

| MERCURY TEST SUMMARY | | | | RANGE SAFETY | | | | |
|---|-------------|-----------------------------------|----------|--------------|-----------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-36236-801 | 77D | Control Unit, Power and Signal | | | | FPT | (5-61) One specimen has been flight proof tested at GD/A as reported in Test Report number 27A-2431 dated 10-20-59. Test report has been reviewed and approved by cognizant engineer. | Completed |
| - - - - - | 88D | | | | | | | |
| - - - - - | 93D | | | | | | | |
| GD/A | 100D | | | | | | | |
| 27-36236-801 | 103D | | | | | | | |
| | 107D | | | | | | | |
| | 109D | | | | | | | |
| | 113D | | | | | | | |
| | 130D | | | | | | | |
| | 144D | | | | | | | |
| | 152D | | | | | | | |
| | 167D | | | | | | | |
| | | QC DI | | | | | | |

27-36236

| MERCURY TEST SUMMARY | | | | RANGE SAFETY | | | |
|---|--|--------------------|-------------|--------------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 27-36277-1 | 77D | Delay Unit, Three- | | | 0th | (8-61) Unit underwent search for critical weakness test. All tests have been performed including RF tests. Test results are being evaluated. This unit supercedes 27-36256-3, which was used on 100D missile. | Complete |
| - - - - - (27-01175) GD/A | 88D 93D | Second Destruct | | | | (12-61) Deviation request, ECP-107A-334-127 has been submitted to waive some of the radiated and conducted test requirements of MIL-I-26600. Report has been reviewed and approved. | |
| 27-36277-1 | 103D 107D 109D 113D 130D 144D 152D 167D | | | | | | |
| 27-36277 | | QCDI | | | | | |

MERCURY

MAJOR CRITICAL COMPONENTS

AZUSA

All transponders have been delivered to AFMTC by General Dynamics/Astronautics. The transponders are now GFE items and GD/A has no control of the various configurations.

Two specimens of the basic unit, 26-10002-1, were flight proof tested. One unit was subjected to temperature, altitude, humidity, vibration, acceleration, and shock tests. The other unit was subjected to life and RF tests. Phase-lock and klystron failures were encountered but were corrected, and the test requirements were met. The various dash number configurations consist of modifications of the crystal filter characteristics, and the units are approved based on similarity to the basic unit.

| MERCURY TEST SUMMARY | | | | | | | | | | AZUSA | |
|---|-------------|----------------------------|----------|-----|-------|-----------|---------|---|------------|-------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | | |
| | | | ENGR | IDE | INSTL | | | | START | COMPL | |
| 26-10002-1 thru -815 AZD 26-001 (Component Spec.) GD/A 26-10002-1 thru -815 | * | Transponder, B-Coherent | | | | | BOS | (5-61) * GD/A has delivered all transponders to AFMTC thus they became GFE items. GD/A has no control of dash numbers assigned for specific Mercury missiles. All dash numbers through -815 are approved on the basis of similarity to -1 which has been flight proof tested. (See Test Report 7A1766R, dated 12-17-58 and AZN-26-050, dated 9-10-58) The major change among various dash numbers is the use of a crystal filter. Two specimens have been tested. S/N 189 has been subjected to temperature, altitude, humidity, vibration, acceleration, and shock tests. S/N 174 has been subjected to RF and life tests. <u>NOTE</u> Specimens failed to meet phase lock parameter requirements during temperature (+120°F), vibration, acceleration, and life tests. The klystron failed during the acceleration test. Specimens were readjusted or repaired and testing was repeated until it passed the test requirements. | Completed | | |

MERCURY
MAJOR CRITICAL COMPONENTS
ABORT SENSING AND IMPLEMENTATION

None of the abort sensing and implementation system components require further action or approval.

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | |
|---|-------------|-----------------------------------|----------|----------------------------------|-------|---|----------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | REMARKS | TEST SCHED START COMPL |
| | | | ENGR | IDR | INSTL | | |
| 27-111111-825 - - - - - 27-00210B GD/A 27-111111-825 | 100D | Abort Sensing and Control Unit | | | | (10-61) This unit was flight proof tested to the requirements of 7-00210B by the GD/A test labs per test request number 27A1271. The following tests were performed: 1. Temperature-Altitude-Humidity a. Temperature extremes; -65°F, +160°F. b. Altitude extreme; 1 mm Hg c. Humidity; 95% 2. Vibration a. 8g maximum 3. Acceleration a. +10g, -2g; longitudinal axis b. ±3g, mutually perpendicular axes. | Completed April 1961 |

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | |
|---|-------------|--------------------------------|----------|----------------------------------|-------|--|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | REMARKS | TEST SCHED START COMPL |
| | | | ENGR | IDE | INSTL | | |
| 27-11111-831 - - - - - GD/A | 88D | Abort Sensing and Control Unit | | | | (5/61) Approved based on similarity to the -825 unit. The changes on the -825 unit resulting in a -831 unit consist of the addition of suppression diodes across the relay coils, harness routing controls, and mounting change eliminating a mechanical interference. Two specimens of this unit were subjected to reliability tests. | Completed April 1961 |

27-11111

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | |
|---|-------------|--------------------------------|----------|----------------------------------|---------|--|----------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | START COMPL |
| 27-11111-835 | 77D | Abort Sensing and Control Unit | | | BOS | (10-61) Approved based on similarity to the -825 unit. The changes on the -831 unit resulting in the -833 unit consist only in the use of "blue dot" transformers and decreasing the length of the magnetic amplifier mounting studs. The changes to -833 for the -835 consist of using fiber washers for motor mountings, replacing two diodes with resistors, and changing two resistance values in the magnetic amplifier null voltage suppression circuit. The circuit changes prohibit high null voltage output which would prevent drop-out of the capsule fail detection relays in case of an abort. The unit did not meet MIL-I-26600 requirements. A deviation request, ECP CAC-107A-344-102 (CCN 1336 for -4 contract; CCN 722 for -299 contract; CCN 86 for -635 contract; CCN 71 for -699 contract), was approved for all 27-11111 assemblies. | Completed April 1961 |
| - - - - | 93D | | | | | | |
| - - - - | 103D | | | | | | |
| 7-00210B | 107D | | | | | | |
| GD/A | 109D | | | | | | |
| 27-11111-835 | 113D | | | | | | |
| | 130D | | | | | | |
| | 144D | | | | | | |
| | 152D | | | | | | |
| | 167D | | | | | | |
| | | QCDI | | | | | |

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | | | | |
|---|-------------|----------------------|-------------|----------------------------------|-------|-----------|---------|--|------------|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | ENGR | INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | START COMPL |
| | | | | | | | | | Completed | |
| 27-11814-3 | 7.0 | Valve, Constant Flow | | | | | BOS | (10-61) | | Completed |
| - - - - - | 88D | | | | | | | Approved based on similarity to 27-04314-1 which was qualified for use on the D and E series P/U system. | | |
| 27-04314C | 93D | | | | | | | The valves differ only in calibration. | | |
| W.O. Leonard | 100D | | | | | | | The -1 was calibrated for a flow rate of 7.0 \pm 1.0 SCFH; the -3 was calibrated for a flow rate of 14 \pm 1.0 SCFH. | | |
| 128650-7 | 103D | | | | | | | | | |
| | 107D | | | | | | | | | |
| | 109D | | | | | | | | | |
| | 113D | | | | | | | | | |
| | 150D | | | | | | | | | |
| | 144D | | | | | | | | | |
| | 152D | | | | | | | | | |
| | 167D | | | | | | | | | |
| 27-11814 | | QCDI | | | | | | | | |

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | | | |
|---|-------------|------------------------|----------|----------------------------------|-----------|---------|--|------------|---------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | INSTL | | | | START | COMPL |
| 87-44900-357 | 77D | Switch, Pressure, | | | | 0th | (5-61) | Completed | Sept. 1960 |
| - - - - - | 88D | Booster Fuel Injection | | | | | This item is a modified commercial part. | | |
| - - - - - | 93D | Manifold (470 psid) | | | | | Twelve units were evaluation tested at | | |
| Bourns Labora- | 100D | | | | | | GD/A per 27A419, dated 9-1-60. The fol- | | |
| tories | 107D | | | | | | lowing tests were performed: | | |
| 71731-0-4.7-000 | 109D | | | | | | Temperature (-65°F, 2 hrs) | | |
| | 113D | | | | | | (+165°F, 2 hrs) | | |
| | 130D | | | | | | Vibration (.25 in., 10 to 25 cps) | | |
| | 144D | | | | | | (16 to 35G's, 25 to 2000 cps) | | |
| | 152D | | | | | | Acceleration (10G's, all axes) | | |
| | 167D | | | | | | | | |
| | 103D | | | | | | | | |
| | | QCDI | | | | | | | |

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | | | |
|---|-------------|--------------------|----------|----------------------------------|-----------|---------|--|------------|------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | IDR | | | | START | COMPL |
| 87-44900-358 | 77D | Switch, Pressure, | | | | 0th | (5-61) | Completed | Sept. 1960 |
| - - - - - | 88D | Sustainer Fuel | | | | | This item is a modified commercial part. | | |
| - - - - - | 93D | Injection Manifold | | | | | All six units successfully passed evaluation tests performed at GD/A per 27A419, dated 9-1-60. The following tests were performed: | | |
| Bourne Laboratories | 100D | (560 psia) | | | | | Temperature (-65°F, 2 hrs) | | |
| 71732-0-5.6-000 | 103D | | | | | | (+165°F, 2 hrs) | | |
| | 107D | | | | | | (.25 in., 10 to 25 cps) | | |
| | 109D | | | | | | (16 to 35G's, 25 to 2000 cps) | | |
| | 113D | | | | | | Acceleration (10G's, all axes) | | |
| | 130D | | | | | | | | |
| | 144D | | | | | | | | |
| | 152D | | | | | | | | |
| | 167D | | | | | | | | |
| | | QC DI | | | | | | | |

87-44900-358

| MERCURY TEST SUMMARY | | | | | ABORT SENSING AND IMPLEMENTATIONS | | | | |
|---|-------------|---|----------|-------|-----------------------------------|---------|---|----------------------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | INSTL | | | | START COMPL | |
| 87-44900-359 | 77D | Switch, Pressure, Sustainer Hydraulic (2000 psia) | | | | 0th | (5-61) This item is a modified commercial part. All six units successfully passed evaluation tests performed at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in, 10 to 25 cps) (16 to 35G's, 25 to 2000 cps) Acceleration (10G's, all axes) | Completed Sept. 1960 | |
| - - - - - | 88D | | | | | | | | |
| - - - - - | 93D | | | | | | | | |
| Bourns Laboratories | 100D | | | | | | | | |
| 71733-0-20-000 | 103D | | | | | | | | |
| | 107D | | | | | | | | |
| | 109D | | | | | | | | |
| | 113D | | | | | | | | |
| | 130D | | | | | | | | |
| | 144D | | | | | | | | |
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| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | | |
|---|-------------|---|----------|----------------------------------|-----------|---------|---|----------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 87-44900-372 | 88D 100D | Switch, Pressure, 10 ² Tank Ullage (21.5 psid) | | | | 0th | (10-61) This item is a modified commercial part. Six units were evaluation tested at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 18 cps) (8G's, 18 to 2000 cps) Acceleration (10G's, all axes) <u>NOTE</u> Two of the six units failed in test. One unit had a contact failure at -65°F. After repair, the unit de- veloped heavy wiper lift-off around the switching point during X axis vibration. The other unit developed heavy wiper lift-off during Z axis vibration. The unit was repaired and retested and no malfunctions occurred. This unit replaced by 87-44900-356. | Completed Sept. 1960 |
| 87-44900-372 | | | | | | | | |

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | |
|--|-------------|---|-------------|----------------------------------|---------|--|----------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 87-44900-374 - - - - - - - - Bourns Labora- tories 50936-0-11-000 | 88D 100D | Switch, Pressure, Booster Cut-off, L0 ₂ Tank (11.0 psid) | | | 0th | (10-61) This item is a modified commercial part. All three units successfully passed evaluation tests performed at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25 in., 10 to 18 cps) (8G's, 18 to 2000 cps) Acceleration (10G's, all axes) This unit replaced by 87-44900-355 for the remaining effectivities. | Completed Sept. 1960 |
| | | QC DI | | | | | |

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | | |
|---|-------------|------------------------|------------------------------|----------------------------------|---------|--|------------|------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR ENGR INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | | | | | START | COMPL |
| 87-44900-496 | 77D | Switch, Pressure, Pro- | | | BOS | (5-61) | Completed | Sept. 1960 |
| - - - - - | 88D | pellant Differential | | | | This item is a modified commercial part. | | |
| - - - - - | 93D | (2.5 psid) | | | | It is approved based on similarity to the | | |
| Servonic Instru- | 100D | | | | | -354 (P-20-1) unit except for a pressure | | |
| ments | 103D | | | | | setting of 2.5 psid instead of 4.0 psid. | | |
| P-20-4 | 107D | | | | | All six -354 units passed evaluation tests | | |
| | 109D | | | | | performed at GD/A per 27A419, dated | | |
| | 113D | | | | | 9-1-60. The following tests were per- | | |
| | 130D | | | | | formed: | | |
| | 144D | | | | | Temperature (-65° F, 2 hrs) | | |
| | 152D | | | | | (+165° F, 2 hrs) | | |
| | 167D | | | | | (.25 in., 10 to 18 cps) | | |
| | | | | | | Vibration (8G's, 18 to 2000 cps) | | |
| | | | | | | Acceleration (10 G's, all axes) | | |
| | | QCDI | | | | | | |

87-44900-496

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | | | |
|---|-------------|---|----------|----------------------------------|-----------|---------|--|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTR | | | | START COMPL |
| 87-44900-356 - - - - - - - - Servonic Instru- ments, Inc. P-20-3 | 93D | Switch, Pressure, LO2 Tank Ullage (21.5 psid) | | | | 0th | (10-61) This item is a modified commercial part. Six units were evaluation tested at GD/A per 27A419, dated 9-1-60. The following tests were performed: Temperature (-65°F, 2 hrs) (+165°F, 2 hrs) Vibration (.25in., 10 to 18 cps) (8g, 18 to 2000 cps) Acceleration(10g, all axes) <u>NOTE</u> Two of the six units failed in test. One unit exhibited intermittent high resist- ance and broke contact between 5 to 15 psi. The unit was repaired and retested but did not operate properly. The second unit shifted to 28 psid at -65°F and remained at this point when back at ambient. The unit was repaired and then successfully tested. Search for critical weakness tests have been completed. 1,000 hour life test was completed 9-29-61. Component was successfully open-loop tested on 88D. This part replaces 87-44900-372, due to increased reliability level. | Complete Sept. 1961 |
| | | QCDI | | | | | | |

| MERCURY TEST SUMMARY | | | | ABORT SENSING AND IMPLEMENTATION | | TEST SCHEDULE | |
|---|--|-------------|---|----------------------------------|---|--------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | START | COMPL |
| 87-44900-584 | | 77D | Switch, Pressure, LO ₂ Tank Ullage (19.5 psid) | BOS | (12-61) Approved based on similarity to 87-44900-356. This switch is the same as, and replaces, the -356. The -854 is calibrated at 19.5 psid. The change was made when results of 93D were analyzed. It was found that LO ₂ tank ullage pressure was approximately 22.5 ² psid a few seconds after launch. A one pound tolerance for an abort condition is not sufficient. | Complete Dec. 1961 | |
| - - - - - | | 103D | | | | | |
| - - - - - | | 107D | | | | | |
| - - - - - | | 109D | | | | | |
| Servonic | | 113D | | | | | |
| Instruments, | | 130D | | | | | |
| Inc. | | 144D | | | | | |
| | | 152D | | | | | |
| | | 167D | | | | | |

MERCURY
MAJOR CRITICAL COMPONENTS
AUTOPILOT

None of the items in the Autopilot section require further approval action prior to flight. FPT tests on the gyro rate and displacement group and the remote rate group have been completed and the preproduction test is in progress. These assemblies contain gyros with spin motor rotation detectors. Preproduction testing on the new displacement gyros is complete. Flight proof tests and preproduction tests are complete on the new rate gyro.

The alternate vendor for 27-04204-1, 27-04205-1, 27-04208-1, 27-04209-1 and 27-04211-1 have been eliminated as sources for these items; therefore, these items have been removed from this report.

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | | | |
|---|-------------|--------------------------|------|-----------|-----------|---------|--|--------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | APPR | ENGR | | | | START | COMPL |
| 7-04250-1 7-04250G - - - - Kearfott Corp. T2506-1A | 100D | Gyroscope - Displacement | | | | PPT | (5-61) This unit was tested to 7-00209B requirements per GD/A report number 27A150 dated 3-12-60. | Completed May 1960 | |
| | | QCDI | | | | | | | |

27-04250

| MERCURY TEST SUMMARY | | | AUTOPILOT | | | |
|---|-------------|-----------------------------|--------------|--|---------------|----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 7-04250-5 7-04250G 7-04265G Kearfott Corp T2506-2A | 88D | Gyroscope - Displacement | BOS | (10-61) (12-61) Approved based on similarity to 27-04250-1, which was preproduction tested. The 27-04250-1 was tested to 7-00209B requirements per GD/A test report Number 27A150. | Complete | May 1960 |

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | | |
|---|---------------------------|--------------------------------|----------|-----------|-----------|---------|--|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | INITIALS FUNCTIONALITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-04204-1 | 77D | Transducer-Feedback, Linear | | | | PPT | (5-61) One 27-04204-1 unit was tested to Specification 27-04216F by Crescent Corp. and test results reported in Test Report 25-220, dated 12-58. Autopilot design group approved the 27-04204-1 tests on VAF MC 25 668, dated 2-27-59. (11-61) Eight specimens were subjected to search-for-critical-weakness tests and no failures were experienced. However, slight out-of-tolerance conditions were noted in all specimens. | Completed Feb. 1959 |
| 27-04204E | 88D | | | | | | | |
| 27-04216F | 93D | | | | | | | |
| Crescent Corp. | 100D | | | | | | | |
| HC-65-P-4E | 103D | | | | | | | |
| | 107D | | | | | | | |
| | 109D | | | | | | | |
| | 113D | | | | | | | |
| | 130D | | | | | | | |
| | 144D | | | | | | | |
| | 152D | | | | | | | |
| | 167D | | | | | | | |
| | | QC DI | | | | | | |

27-04204

| MERCURY TEST SUMMARY | | | | | AUTOPILOT | | | |
|---|-------------|--------------------------------|----------|-----|-----------|---------|---|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | IDE | | | | INSTL |
| 27-04205-1 | 77D | Transducer-Feedback, Linear | | | | BOS | (5-61) | Completed July 1958 |
| 27-04205D | 88D | | | | | | The 27-04205-1 unit (Crescent Corp.) was approved based on similarity to 7-04214 (HC44-4E) and 7-04215 (Crescent HC65-4E) and test report on 7-04242-1 (Crescent HC25-207) test report E-333. | |
| 27-04213D | 93D | | | | | | The 27-04205-1 was electrically similar to 7-04214 and 7-04215 and mechanically similar to 7-04242-1. | |
| Crescent Corp. | 100D | | | | | | Autopilot design group approved the 27-04205-1 based on similarity on VAF MC 17,120, dated 7-3-58. | |
| HC-106-4E | 103D | | | | | | | |
| | 107D | | | | | | | |
| | 109D | | | | | | | |
| | 113D | | | | | | | |
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| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | | |
|---|-------------|----------------------|----------|-----------|---------|--|------------|--------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | INSTR | | | START | COMPL |
| 27-04206-1 | 77D | Valve-Flow, Limiter, | | | PPT | (5-61) | Completed | Dec. 1958 |
| 27-04206C | 88D | Hydraulic | | | | One 27-04206-1 unit was tested to specification 27-04218A by Sterer Corp. and reported in test report 13000. | | |
| 27-04218D | 93D | | | | | Autopilot design group approved the 27-04206-1 on VAF MC 22873, dated 12-1-58. | | |
| Sterer | 100D | | | | | (11-61) | | |
| 13000 | 103D | | | | | Specification was revised to D revision. | | |
| | 107D | | | | | The specification revisions require more severe fluid temperature and proof cycle tests. | | |
| | 109D | | | | | Ten specimens were subjected to search-for-critical-weakness tests and no failures were experienced. However, slight out-of-tolerance conditions were noted in all specimens. | | |
| | 113D | | | | | The fluid temperatures experienced during the third level of the search-for-critical-weakness tests are in excess of the revised (Revision D) requirements for the 27-04206-1 valve. | | |
| | 130D | | | | | | | |
| | 144D | | | | | | | |
| | 152D | | | | | | | |
| | 167D | | | | | | | |
| | | QC DI | | | | | | |

| MERCURY TEST SUMMARY | | | | | AUTOPILOT | |
|--|---|--|--------------|---|---------------|---------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | QUALIFIED BY | REMARKS | TEST SCHEDULE | |
| | | | | | START | COMPL |
| 27-04208-1 27-04208D 27-04215G Cadillac Gage Co. FC26-398A | 77D 88D 93D 106D 103D 107D 109D 113D 130D 144D 152D 167D | Valve - Servo, Electro-Hydraulic Sustainer | BOS | (5-61) The 27-04208-1 unit was approved based on similarity to GD/A 7-08369-1 as reported in Burst and Qualification Test Report CG 6-20. Autopilot design group approved the 27-04208-1, based on similarity to 7-08369-1 on VAF MC 37276, dated 9-3-59. (11-61) Specification was revised to G revision which incorporates higher temperature requirements. The 27-04208-1 servo valve has performed satisfactorily at temperatures in excess of the revised temperature requirements during search-for-critical-weakness tests. | Complete | Sept. 1959 |
| | | QCDI | | | | |

| MERCURY TEST SUMMARY | | | | | | | | | | AUTOPILOT | |
|---|-------------|-------------------|----------|-----|-------|-----------|---------|--|------------|-------------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | START COMPL | |
| | | | ENGR | IDE | INSTL | | | | | | |
| 27-04209-1 | 77D | Valve - Servo, | | | | | BOS | (5-61) | Complete | Nov. 1958 | |
| 27-04209D | 88D | Electro-Hydraulic | | | | | | The 27-04209-1 valve was approved on basis of similarity to 7-08353-3 which was pre-production tested. | | | |
| 27-04212H | 93D | | | | | | | The 7-08353-3 valve was tested by Cadillac and reported in test Number CG 6-19. Report was approved on VAF MC 21969, dated 11-13-58. | | | |
| Cadillac Gage | 100D | | | | | | | Autopilot design group approved the 27-04209-1 valve on VAF's MC 21971 and MC 21969, dated 11-1-58. | | | |
| FC-26-397A | 103D | | | | | | | (11-61) | | | |
| | 107D | | | | | | | Specification was revised to H revision, which incorporates higher temperature requirements. | | | |
| | 109D | | | | | | | The 27-04209-1 servo valve has performed satisfactorily at temperatures in excess of the revised temperature requirements during search-for-critical-weakness tests. | | | |
| | 113D | | | | | | | | | | |
| | 130D | | | | | | | | | | |
| | 144D | | | | | | | | | | |
| | 152D | | | | | | | | | | |
| | 167D | | | | | | | | | | |
| | | QC DI | | | | | | | | | |

| MERCURY TEST SUMMARY | | | | | AUTOPILOT | | | | | |
|---|---|----------------------------------|----------|-----|-----------|-----------|---------|--|---------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENG | IDF | INSTL | | | | START | COMPL |
| 27-04211-1 27-04211E 27-04217H Crescent Corp. HC-67P-4E | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Transducer - Feedback, Linear | | | | | PPT | (5-61) The 27-04211-1 unit was tested to specification 27-04217D by Crescent Corp. and reported in Test Report 25-221. Autopilot design group approved the 27-04211-1 unit on VAF MC 25,074, dated 1-8-59. (11-51) Specification was revised to H revision. The significant revision to the specification was the addition of MIL-I-26600 requirement for RF noise testing. | Completed Jan. 1959 | |
| | | | | | | | | | | |

27-04211

QC DI

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | | |
|--|-------------|----------------------|----------|-----------|-----------|---------|---|----------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-04301-1 27-04301D 27-04313E Minneapolis- Honeywell JRT 114 | 88D 100D | Rate Gyro, Autopilot | | | | PPT | (6-61) This unit replaces 27-41709. Testing by GD/A on Test number 27A906 is complete. The report was reviewed and approved, but has since been disapproved. This unit has been replaced by 27-04574-1 and no additional testing is planned. | See Remarks |

27-04301

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | |
|---|--|----------------------|------------------------------|-----------|---------|---|---|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR INSTL ENGR | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 27-04574-3 27-04584B 27-04313E Boston Division Minneapolis- Honeywell JRS-101 | 77D 93D 103D 107D 109D 113D 130D 144D 152D 167D | Kate Gyro, Autopilot | | | PPT | (6-61) This gyro contains spin motor rotation detectors. Testing is to be performed by GD/A on test number 27A956 per specification 27-04313 "E". This unit replaces 27-04301-1. The flight proof and preproduction testing is complete. Three specimens are undergoing 1000 hour life tests. | Complete 12-61 See Remarks |
| | | QCDI | | | | | |

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | | | |
|---|-------------|-----------------------------|-------------|----------------------|-----------|---------|---|------------|------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | ENGR IDR INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | | | | | | START | COMPL |
| 27-41000-841 | 109D | Servo Amplifier - Filter | | | | BOS | (12-61) | Complete | Sept. 1960 |
| - - - - - | | | | | | | <p>Approved based on similarity to the 27-41000-807 unit, which was flight proof tested on GD/A test number 7A2247, and the 27-41000-813 unit which was preproduction tested on GD/A test number 27A766, dated 9-28-60. Some deviations to MIL-I-26600 requirements were approved. Reference ECP No. CAC-107A-334-59 and CCN No. 532 and 206.) Differences between the units tested and the 27-41000-841 consist of gain and filter changes and incorporation of components with increased reliability.</p> | | |

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | |
|---|-------------|-------------------|-------------|-----------|---------|---------|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 27-41000-843 | 77D | Servo Amplifier - | | | BOS | (12-61) | Complete Sept. 1960 |
| - - - - - | 103D | Filter | | | | | |
| 27-04976 | 107D | | | | | | |
| GD/A | 113D | | | | | | |
| - - - - - | 130D | | | | | | |
| | 144D | | | | | | |
| | 152D | | | | | | |
| | 167D | | | | | | |

Approved based on similarity to the 27-41000-807 unit, which was flight proof tested on GD/A test number 7A2247, and the 27-41000-813 unit, which was preproduction tested on GD/A test number 27A766, dated 9-28-60. Some deviations to MIL-I-26600 requirements were approved. (Reference ECP No. CAC-107A-334-59 and CCN No. 532 and 206.) Differences between the units tested and the 27-41000-843 unit consist of gain and filter changes and incorporation of components with increased reliability.

| MERCURY TEST SUMMARY | | | | | | | | | | AUTOPILOT | | |
|----------------------|-----------|-------------|---------------------------------------|----------|-----|-------|-----------|---------|---|---------------------------|--|--|
| PART NUMBER | | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | | |
| SPEC CONTROL | PROC SPEC | | | ENG | IDE | INSTL | | | | START/COMPL | | |
| VENDOR NAME | | | | | | | | | | | | |
| VENDOR P/N | | | | | | | | | | | | |
| 27-41001-935 | | 88D | Programmer - Electronic, Autopilot | | | | | BOS | (6-61) Approved based on similarity to the 27-41001-837 unit which was preproduction tested to 7-00209B requirements on 7A2248 dated 9-17-59. Some deviations to MIL-I-26600 requirements were approved (Reference ECP No: CAC-107A-334-47 and CCN-532.) Approximately 90% of the changes from the -837 unit to the -935 unit consist of programming changes. The remaining changes consist of incorporation of different components such as transistors, and the addition of transient suppression diodes. | Completed Sept 1959 | | |
| - | - | - | | | | | | | | | | |
| - | - | - | | | | | | | | | | |
| GD/A | | | | | | | | | | | | |
| - | - | - | | | | | | | | | | |

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | |
|---|-------------|--------------------------------------|------------------------------|-----------|---------|--|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR ENGR INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMP. |
| 27-41001-951 | 93D | Programmer- Electronic, Autopilot | | | BOS | (6-61) Approved based on similarity to the 27-41001-837 unit, which was preproduction tested to 7-00209B requirements on 7A2248 dated 9-17-59. Some deviations to MIL-I-26600 requirements have been approved (Reference ECP. No: CAC-10-47 and CCN-532.) Approximately 90% of the changes from the -837 unit to the -951 unit consist of programming changes. The remaining changes consist of incorporation of different components such as transistors, and the addition of transient suppression diodes. | Completed Sept 1959 |
| | | | | | | | |

27-41001

| MERCURY TEST SUMMARY | | | | | | | | | | AUTOPILOT | |
|---|----------------------|---------------------------------------|----------|-----|-------|-----------|---------|---|---------------------------|-----------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | | |
| | | | ENGR | IDE | INSTL | | | | START COMPL | | |
| 27-41001-967 | 107D 109D 113D | Programmer - Electronic, Autopilot | | | | | BOS | (12-61) Approved based on similarity to the 27-41001-837 unit, which was preproduction tested to 7-00209B requirements on 7A2248 dated 9-17-59. Some deviations to MIL-1-26600 requirements were approved. (Reference ECP No. CAC-107A-334-47 and CCN 532. Approximately 90% of the changes from the -837 unit to the -967 unit consist of programming changes. The remaining changes consist of incorporation of different components such as transistors and the addition of transient suppression diodes. | Complete Sept. 1959 | | |

| MERCURY TEST SUMMARY | | | | | AUTOPILOT | | | | |
|---|--|---------------------------------|----------|-------|-----------|---------|--|------------|------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | INSTL | | | | START | COMPL |
| 27-41001-969 | 77D 103D 130D 144D 152 D 167D | Programmer-Electronic-Autopilot | | | | BOS | (12-61) Approved based on similarity to the 27-41001-837 unit, which was preproduction tested to 7-00209B requirements on 7A2248 dated 9-17-59. Some deviations to MIL-I-26600 requirements were approved. (Reference ECP No. CAC-107A-334-77 and CCN 532.) Approximately 90% of the changes from the -837 unit to the -969 unit consist of programming changes. The remaining changes consist of incorporation of different components such as transistors and the addition of transient suppression diodes. | Complete | Sept. 1959 |

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | | |
|---|-------------|---|----------|-----------|-------|---|-------------|--------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | REMARKS | TEST SCHED | |
| | | | ENGR | IDR | INSTL | | START | COMPL |
| 27-41002-859 - - - - - - - - - - GD/A - - - - - | 93D 109D | Gyroscope Group, Rate and Displacement | | | | (10-61) To be approved based on similarity to 27-45202-801, which will be preproduction tested for E series missiles. The assembly contains gyros with spin motor rotation detectors. Testing on the 27-45202-801 is in process. Flight proof testing is complete, and preproduction testing is scheduled for February 1962 completion. (1-62) Differences between the 27-45202-801 and 27-41002-859 are due to different payload and trajectory characteristics. | In Prog. | Feb. 1962 |
| | | QC DI | | | | | | |

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | |
|---|---|--|-------------|-----------|---------|--|-----------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | INITIALS | NOMENCLATURE | MAD APPR | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 27-41002-397 | 77D 103D 107D 113D 130D 144D 152D 167D | Gyroscope Group - Rate and Displacement | | | BOS | (12-61) Approval to be based on similarity to 27-45202-801, which will be preproduction tested for E series missiles. The assembly contains gyros with spin motor rotation detectors. Testing on the 27-45202-801 is in progress. Flight proof testing is complete, and preproduction testing is scheduled for February 1962 completion. (1-62) Differences between the 27-45202-801 and 27-41002-859 are due to different payload and trajectory characteristics. The -881 replaced the -859 because of confidence changes. Ref. ECP 933. (2-62) The -897 replaced the -881 because of confidence changes. Ref. ECP 933. | In Feb. Prog. 1962 |

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | | | |
|---|----------|-------------------------------------|----------|-----------|-----------|---------|--|-------------|--------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | INITIALS | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | INSTL | | | | S:ART COMPL | Not Required |
| 27-41330-805 | 77D | Power Group - Gyroscopes, Autopilot | | | | OTH | (5-51) | | Not Required |
| - - - - - | 88D | | | | | | This assembly is not tested at this level, it is a part of the gyroscopes groups 27-45302-1, 27-45302-803, and 27-45302-859. | | |
| - - - - - | 93D | | | | | | Special developed vendor items in this assembly are subject to test. | | |
| GD/A | 100D | | | | | | | | |
| - - - - - | 103D | | | | | | | | |
| | 107D | | | | | | | | |
| | 109D | | | | | | | | |
| | 113D | | | | | | | | |
| | 130D | | | | | | | | |
| | 144D | | | | | | | | |
| | 152D | | | | | | | | |
| | 167D | | | | | | | | |
| | | QC DI | | | | | | | |

27-41330

| MERCURY TEST SUMMARY | | | | | | | | | | AUTOPILLOT | |
|---|--|--|-------------|---|----------|-----|-----------|---------|---|--------------|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | | | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | | | ENGR | IDE | | | | INSTL | START COMPL |
| 27-41331-5 | | | 88D 100D | Gyroscope Group - Displacement, Autopilot | | | | OTH | (5-61) This assembly is not tested at this level, it is a part of the gyroscope groups 27-45302-1 and -803. Special developed vendor components in this assembly, such as the gyros, are subject to test. | Not Required | |
| - - - - - | | | | | | | | | | | |
| - - - - - | | | | | | | | | | | |
| GP/A | | | | | | | | | | | |
| - - - - - | | | | | | | | | | | |
| | | | | QCDI | | | | | | | |

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | |
|---|-------------|--------------------------------------|-------------------------------------|-----------|---------|---|--------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR INSTL IDR ENGR | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 27-41332-5 - - - - - GD/A - - - - - | 88D 100D | Gyroscope Group - Rate, Autopilot | | | OTH | (5-61) This assembly is not tested at this level, it is a part of the gyroscope groups 27-45302-1 and -803. Special developed vender components in this assembly, such as the gyros, are subject to test. | Not Required |

27-41332

| MERCURY TEST SUMMARY | | | | | AUTOPILOT | | | | |
|---|-------------|---|------|------|-----------|---------|--|--------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | APPR | ENGR | | | | START | COMPL |
| 27-41333-5 - - - - - - - - - - GD/A - - - - - | 100D | Power Supply Component - Amplifier, +30V., Gyro Group | | | | OTH | (5-61) This assembly is not tested at this level, it is a part of the Gyroscope group 27-45302 -1. Special developed vendors items in this assembly are subject to test. | Not Required | |
| | | QCDI | | | | | | | |

| MERCURY TEST SUMMARY | | | | | AUTOPILLOT | | |
|---|-------------|--|---------------------------|-----------|------------|--|-----------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR ENGR INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 27-41333-801 - - - - - - - - GD/A - - - - | 88D | Power Supply Component Amplifier, +30v, Gyro Group | | | 0th | (10-61) This assembly is not tested at this level, it is a part of the gyroscope group 27- 45302 -803. Special developed vendor items in this assembly are subject to test. | Not Required |

| MERCURY TEST SUMMARY | | | | | | | | | | AUTOPILOT | |
|---|--|----------|--|----------------------|--|-----------|---------|---|---------------------------|-----------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | | ACTIVITY | NOMENCLATURE | MAD APPE INSTL | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED START COMPL | | |
| 27-41333-805 | | 77D | Power Supply Component - Amplifier, + 30V., Gyro Group | | | | OTH | (11-61) This assembly is not tested at this level, it is part of the gyroscope group, which was qualified by preproduction testing. Special developed vendors items in this assembly are subject to test. | Not Required | | |
| - - - - - | | 93D | | | | | | | | | |
| - - - - - | | 103D | | | | | | | | | |
| GD/A | | 107D | | | | | | | | | |
| - - - - - | | 109D | | | | | | | | | |
| - - - - - | | 113D | | | | | | | | | |
| - - - - - | | 130D | | | | | | | | | |
| - - - - - | | 144D | | | | | | | | | |
| - - - - - | | 152D | | | | | | | | | |
| - - - - - | | 167D | | | | | | | | | |
| | | | QC DI | | | | | | | | |

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | | | | |
|---|-------------|----------------------|----------|-----------|-------|-----------|---------|--|------------|----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | IDE | INSTL | | | | START | COMPL |
| 27-41703-5 | 88D | Control Group - | | | | | BOS | (5-61) | Completed | May 1960 |
| - - - - - | 100D | Autopilot, Rate Gyro | | | | | | Approved based on similarity to -3 assembly, which was preproduction tested on GD/A test number 7A2334, dated 5-21-60. | | |
| CD/A | | | | | | | | | | |
| - - - - - | | | | | | | | | | |

27-41703-5

| MERCURY TEST SUMMARY | | | | | AUTOPILOT | | | | |
|---|-------------|----------------------------|----------|-------|-----------|---------|---|---------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | INSTL | | | | START | COMPL |
| 27-45300-3 - - - - - - - - GD/A - - - - | 100D | Servo Amplifier- Filter | | | | BOS | (6-61) Approved based on similarity to the 27-41000-807 unit which was flight proof tested on GD/A test number 7A2247, and the 27-41000-813 unit which was preproduction tested on test number 27A766 dated 9-28-60. Some deviations to MIL-I-26600 requirements were approved. (Reference ECP No. CAC-107A-334-59 and CCN-532.) The 27-45300-3 unit differs from the tested units only in gain and filter changes. | Completed Sept 1960 | |

27-45300-3

| MERCURY TEST SUMMARY | | | | AUTOPILOT | | | | | |
|---|-------------|----------------------------|------|-----------|-----------|---------|---|---------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | APPR | INSTL | | | | START | COMPL |
| 27-45300-801 - - - - - GD/A - - - - - | 88D 93D | Servo Amplifier- Filter | | | | BOS | (6-61) Approved based on similarity to the 27-41000-807 unit which was flight proof tested on GD/A test number 7A2247, and the 27-41000-813 unit which was preproduction tested on GD/A test number 27A766 dated 9-28-60. Some deviations to MIL-I-26600 requirements were approved. (Reference ECP. No. CAC-107A-334-59 and CCN No. 532 and 206.) Differences between the units tested and the 27-45300-801 consist of gain and filter changes. | Completed Sept 1960 | |
| | | QCDI | | | | | | | |

27-45300-801

| MERCURY TEST SUMMARY | | | | | AUTOPILOT | | | | |
|---|-------------|---------------------------------------|----------|-------|-----------|---------|---|---------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | INSTL | | | | START | COMPL |
| 27-45301-3 - - - - - GD/A - - - - - | 100D | Programmer - Electronic, Autopilot | | | | BOS | (6-61) Approved based on similarity to the 27-41001-837 unit, which was preproduction tested to 7-00209B requirements on GD/A test number 7A2248, dated 9-17-59. Some deviations to MIL-I-26600 requirements were approved. (Reference ECP No. CAC-107A-334-47.) Approximately 90% of the changes from the 27-41000-837 to the 27-45301-3 consist of programming changes. The remaining changes consist of incorporation of different components such as transistors and the addition of transient suppression diodes. | Completed Sept 1959 | |

27-45301-3

| MERCURY TEST SUMMARY | | | | | AUTOPILOT | | | |
|---|-------------|--------------------------------|----------|-------|-----------|---------|--|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-45302-1 - - - - - GD / A - - - - - | 100D | Gyroscope Group - Autopilot | | | | BOS | (6-61) Approved based on similarity to the 27-41002-805 assembly which was pre-production tested to 7-00209B per test report 7A2246 dated 6-7-60. Approved deviations consist of storage at -4°F instead of -65°F, and operating acceleration test with 1/2 pin motors disconnected. Changes from the 27-41002-805 to the 27-45302-1 unit consist only of wiring and gain changes. The rate gyros are not used for control, but are used only for ASIS instrumentation. A remote rate gyro group was added for control. | Completed June 1960 |

27-45302-1

| MERCURY TEST SUMMARY | | | | | AUTOPILOT | | | | |
|---|-------------|---|-------------|-------|-----------|---------|--|------------|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | START COMPI |
| | | | | | | | | | |
| 27-45302-803 - - - - - GD/A - - - - - | 88D | Gyroscope Group- Rate and Displacement | | | | BOS | (10-61) Approved based on similarity to the 27-41002-805 assembly, which was preproduction tested to 7-00209B per test report TA2246, dated 6-7-60. Approved deviations consist of storage at -40F instead of -65°F, and operating acceleration test with spin motors disconnected. Changes from the 27-41002-805 to the 27-45302-803 unit consist only of wiring and gain changes. The rate gyros are not used for control, but are used only for ASIS instrumentation. A remote rate gyro group has been added for control. | Complete | |

MERCURY

MAJOR CRITICAL COMPONENTS

SEPARATION

None of the items in the Separation System require further approval action prior to flight.

| MERCURY TEST SUMMARY | | | | | SEPARATION | | | |
|---|---|------------------------------|----------|-------|------------|---------|--|---------------------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-04304-3 27-04304A 27-04309A Conax Corporation 2790A | 77D 88D 93D 100D 103D 107D 109D 113D 130D 144D 152D 167D | Valve Assembly, Explosive | | | | BOS | (6-61) This item is similar to the -1 units which were tested to 7-00209B requirements by GD/A on 7-2245, dated 9-30-59. All 20 units tested met the requirements. The change revising the -1 assembly to a -3 assembly consisted of the addition of an "0" ring retainer. | Completed Nov. 1959 |
| | | QCDI | | | | | | |

| MERCURY TEST SUMMARY | | | | SEPARATION | | | | | |
|---|-------------|-------------------|----------|------------|-----------|---------|--|------------|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | START COMPL |
| | | | ENGR | IDE | | | | INSTL | |
| 27-08575-1 | | Flask, Separation | | | | | (5-61) Refer to Pneumatics Section, | | |

| MERCURY TEST SUMMARY | | | | SEPARATION | | | |
|---|-------------|--|--|------------|-------|------------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | TEST SCHED | |
| | | | ENGR | IDE | INSTL | | |
| 7-45435-3 | 77D | Fitting Assembly, First Stage Separation | | | | Complete | |
| - - - - - | 88D | | | | | April | |
| 27-04200 | 93D | | | | | 1959 | |
| GD/A | 100D | | | | | | |
| - - - - - | 103D | | | | | | |
| | 107D | | | | | | |
| | 109D | | | | | | |
| | 113D | | | | | | |
| | 130D | | | | | | |
| | 144D | | | | | | |
| | 152D | | | | | | |
| | 167D | | | | | | |
| | | | QUAL BY | | | | |
| | | | CHIT COMP | | | | |
| | | | REMARKS | | | | |
| | | | (5/61) | | | | |
| | | | <p>Twenty units were subjected to requirements of 7-00209B by CV/A in 7A1812 dated 4-10-59. As a result of corrosion, four untreated and unlubricated fittings failed to operate after the environmental tests. Two untreated but lubricated fittings operated even though corroded. The remaining units were treated with several different materials. Although some corrosion was present, all the units operated satisfactorily.</p> <p>All production units are now being manufactured with a finish which prevents corrosion.</p> | | | | |
| | | | QC DI | | | | |

MERCURY

MAJOR CRITICAL COMPONENTS

ANTENNA

This section covers TLM/RSC, AZUSA, MOD III guidance antenna assemblies, TLM/RSC ring couplers and MOD III guidance wave guides.

Antennas and ring couplers have been tested and/or approved on the basis of similarity to qualified items.

AZUSA antenna is qualified on the basis of similarity to an antenna which was flight proof tested.

Standard VSWR measurement tests were performed on waveguide assemblies.

| MERCURY TEST SUMMARY | | | | ANTENNA | | | | | | | |
|---|-------------|-------------------|-------------|---------|-----|-------|-----------|---------|---|---------------------------|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | ENGR | IDF | INSTL | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | START COMPL |
| | | | | | | | | | | | |
| 7-11500-3 - - - - (7-01203) GD/A 7-11500-3 | 100D | Ring Coupler, TLM | | | | | | BOS | (6-61) Approved on the basis of similarity to 7-36044-1 which has been preproduction tested (Test Report 7A561, dated 6-3-57). RSC ring coupler has HN connectors and TLM ring coupler uses TN connectors. | Completed June 1957 | |

| MERCURY TEST SUMMARY | | | | | | | | | | ANTENNA | |
|---|--|-------------|-------------------|----------|-----|-------|-----------|---------|---|---------------------|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED | START COMPL |
| | | | | ENGR | IDE | INSTL | | | | | |
| 7-36044-1 | | 77D | Ring Coupler, RSC | | | | | PPT | (5-61) One specimen has been preproduction tested at GD/A (Test Report 7A561, dated 6-3-57). | Completed June 1957 | |
| - - - - | | 88D | | | | | | | | | |
| 7-01203 | | 93D | | | | | | | | | |
| GD/A | | 100D | | | | | | | | | |
| 7-36044-1 | | 103D | | | | | | | | | |
| | | 107D | | | | | | | | | |
| | | | QCDI | | | | | | | | |

7-36044

| MERCURY TEST SUMMARY | | | | | ANTENNA | | | | |
|---|-------------|-------------------|------|-----|---------|---------|--|------------|-----------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD | | | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | IDE | INSTL | | | START | COMPL |
| 7-36044-5 | 109D | Ring Coupler, RSC | | | | PPT | (10-61) | | Completed |
| - - - - - | 113D | | | | | | | | |
| 7-01203 | 136D | | | | | | Approved on basis of similarity to 7-36044-1 which has been preproduction tested (test report 7A561). | | |
| GD/A | 144D | | | | | | The -5 is the same as the -1, except for different covers and the addition of a shim between the base plate and cover. | | |
| 7-36044-5 | 152D | | | | | | | | |
| | 167D | | | | | | | | |

| MERCURY TEST SUMMARY | | | | | ANTENNA | | |
|---|----------|---|-------------|----------------------------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | INITIALS | NOMENCLATURE | MAD APPR | ENGR INSTL CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | | | | | START COMPL |
| 27-12507-3 | 77D | Antenna Assembly, TLM/RSC, (B-2 Pod) | | | BOS | (5-61) Approved on the basis of similarity to the -1 unit which has been preproduction tested. Dash one and dash three are identical electrically as well as mechanically. Dash one is used on Pod-1 and dash three is used on Pod-2. | Completed |
| - - - - - (27-01202) GD / A | 88D | | | | | | |
| 27-12507-3 | 93D | | | | | | |
| | 100D | | | | | | |
| | 103D | | | | | | |
| | 107D | | | | | | |
| | 109D | | | | | | |
| | 113D | | | | | | |
| | 130D | | | | | | |
| | 144D | | | | | | |
| | 152D | | | | | | |
| | 167D | | | | | | |
| 27-12507 | | QCDI | | | | | |

| MERCURY TEST SUMMARY | | | | ANTENNA | | | | | |
|---|-------------|---------------------------------------|----------|---------|-------|---------|--|----------------------------|-------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | QUAL BY | REMARKS | TEST SCHED | |
| | | | ENGR | IDF | INSTL | | | START | COMPL |
| 27-37000-1 | 77D | Antenna Assembly, Mod III Guidance | | | | BOS | (5-61) Approved on the basis of similarity to 27-36010-1 and 27-36006-1 which have been flight proof tested (Test Report numbers 27A2444, dated 10-11-60 and 7A2131, dated 9-6-60). | Completed Sept. 1960 | |
| - - - - - | 88D | | | | | | Assembles into the 27-37005-1 assembly. | | |
| - - - - - | 93D | | | | | | | | |
| GD/A | 100D | | | | | | | | |
| 27-37000-1 | | | | | | | | | |
| 27-37000 | | | | | | | | | |

| MERCURY TEST SUMMARY | | | | | | | | | | ANTENNA | | | | | |
|---|--|-------------|--|---------------------------------------|--|---------------------|--|-----------|--|---------|--|--|--|---------------------------|--|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | | EFFECTIVITY | | NOMENCLATURE | | MAD APPR ENGR | | CRIT COMP | | QUAL BY | | REMARKS | | TEST SCHED START COMPL | |
| 27-37000-5 | | 103D | | Antenna Assembly, MOD III Guidance | | ENGR | | | | BOS | | (10-61) | | Complete Sept. 1960 | |
| - - - - - | | 107D | | | | ENGR | | | | | | Approved on the basis of similarity to 27-36010-1 and 27-36006-1 which have been flight proof tested (Test report numbers 27A2444, dated 10-11-60 and 7A2131, dated 9-6-60). | | | |
| - - - - - | | 113D | | | | ENGR | | | | | | Assembles into the 27-37005-3 assembly. | | | |
| GD/A | | 130D | | | | ENGR | | | | | | The -5 is the same as -3 except that window 27-36002-3 is replaced by 27-36002-1. | | | |
| 27-37000-5 | | 144D | | | | ENGR | | | | | | | | | |
| | | 152D | | | | ENGR | | | | | | | | | |
| | | 167D | | | | ENGR | | | | | | | | | |
| | | | | QCDI | | | | | | | | | | | |

| MERCURY TEST SUMMARY | | | | | ANTENNA | | | |
|---|-------------|--|----------|-----|---------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | QUAL BY | REMARKS | TEST SCEED |
| | | | ENGR | IDF | INSTL | | | START COMPL |
| 27-61382-1 - - - - GD / A 27-61382-1 | 100D | Waveguide, Mod III Guidance (pulse beacon to antenna) | | | | 0th | (5-61) Validation testing has been conducted at GD / A Radiation Lab. No environmental testing is required. | Completed |

27-61382

| MERCURY TEST SUMMARY | | | | ANTENNA | | | | |
|---|-------------|---------------------------|----------|---------|----------|---------|---|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | CRIT COM | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | INSTL | | | | START COMPL |
| 27-61382-3 | 77D | Waveguide, MOD III | | | | 0th | (10-61) | Complete |
| - - - - | 88D | Guidance | | | | | Validation testing was conducted at GD/A Radiation Lab. No environmental testing is required. | |
| - - - - | 93D | (Pulse beacon to antenna) | | | | | The -3 is the same as -1 except for the addition of boss 27-36217-7. | |
| GD/A | 103D | | | | | | | |
| 27-61382-3 | 107D | | | | | | | |
| | 109D | | | | | | | |
| | 113D | | | | | | | |
| | 130D | | | | | | | |
| | 144D | | | | | | | |
| | 152D | | | | | | | |
| | 167D | | | | | | | |
| | | QC DI | | | | | | |

| MERCURY TEST SUMMARY | | | | ANTENNA | | | | |
|---|-------------|--|----------|---------|-------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | IDE | INSTL | | | START COMPL |
| 27-61383-1 - - - - - - - - GD/A 27-61383-1 | 100D | Waveguide, Mod III Guidance (Transition) | | | | 0th | (5-61) Validation testing has been conducted at GD/A Radiation Lab. No environmental testing is required. | Completed |

[illegible]

| MERCURY TEST SUMMARY | | | | ANTENNA | | | | | |
|---|-------------|--------------------|----------|---------|-------|-----------|---------|--|-------------|
| PART NUMBER SPEC CONTROL PROC SPEC VENDOR NAME VENDOR P/N | EFFECTIVITY | NOMENCLATURE | MAD APPR | | | CRIT COMP | QUAL BY | REMARKS | TEST SCHED |
| | | | ENGR | IDE | INSTL | | | | START COMPL |
| 27-61384-1 | 77D | Wave Guide, | | | | | 0th | (5-61) | Completed |
| - - - - | 88D | Mod III Guidance | | | | | | Validation testing has been conducted at | |
| - - - - | 93D | (Structure to rate | | | | | | GD/A Radiation Lab. No environmental | |
| GD/A | 100D | beacon) | | | | | | testing is required. | |
| 27-61384-1 | 103D | | | | | | | | |
| | 107D | | | | | | | | |
| | 109D | | | | | | | | |
| | 113D | | | | | | | | |
| | 130D | | | | | | | | |
| | 144D | | | | | | | | |
| | 152D | | | | | | | | |
| | 167D | | | | | | | | |
| | | QCDI | | | | | | | |

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GENERAL DYNAMICS | ASTRONAUTICS